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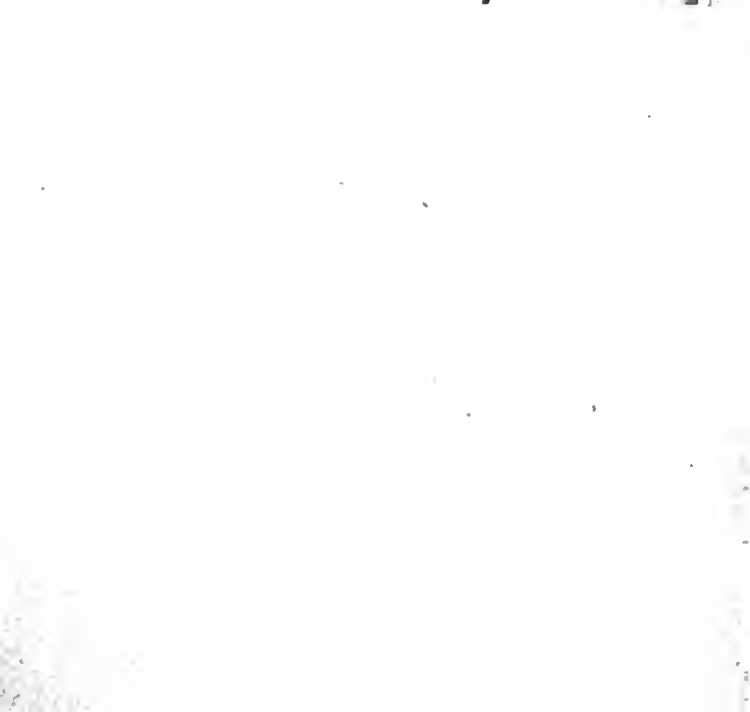
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The Trustees

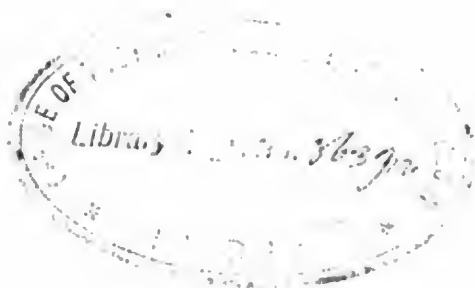
OF

THE INDIAN MUSEUM.

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Indian Museum.

ANNUAL REPORT.

April 1893 to March 1894.

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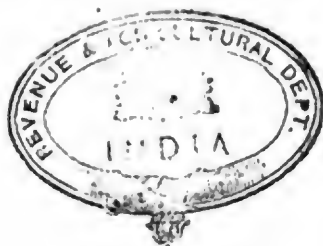
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MINUTES
OF
THE ANNUAL MEETING
OF
THE TRUSTEES OF THE INDIAN MUSEUM.

MONDAY, 11TH JUNE 1894.

Present:

A. SIMSON, Esq., *in the Chair.*

BABU OMBITA NATH MITTER.

PRINCE JAHAN KADER MIRZA MAHOMED WAHED ALI BAHADUR,
K.C.I.E.

A. PEDLER, Esq., F.R.S., *Officiating Honorary Secretary.*

IA. The following Officers were elected for the ensuing year:—

A. PEDLER, Esq., F.R.S., *Chairman.*

SURGEON LT.-COL. D. D. CUNNINGHAM, F.R.S., C.I.E., *Vice-Chairman.*

DR. A. F. R. HERNLE, *Honorary Treasurer.*

DR. W. KING, *Honorary Secretary.*

REPORT OF THE TRUSTEES OF THE INDIAN MUSEUM

IIA. The Committees for the ensuing year were appointed as follows :—

Finance and Visiting Committee.

C. LITTLE, Esq.

COLONEL J. WATERHOUSE, B.S.C.

BABU OMEITA NATH MITTER.

DR. MAHENDRA LALL SIRCAR,
C.I.E.

G. A. GRIERSON, Esq., I.C.S.

BRIGADE-SURGEON LT.-COL. G.
KING, C.I.E., F.R.S.

A. SIMSON, Esq.

G. E. MANISTY, Esq., I.C.S.

Economic Committee.

C. LITTLE, Esq.

COLONEL J. WATERHOUSE, B.S.C.

BABU OMEITA NATH MITTER.

DR. MAHENDRA LALL SIRCAR,
C.I.E.

G. A. GRIERSON, Esq., I.C.S.

BRIGADE-SURGEON LT.-COL. G.
KING, C.I.E., F.R.S.

IIIA. The Trustees' Administration Report and the Reports on the Zoological and Archæological Section by the Superintendent of the Museum, and on the Economic and Art Section by the Officer in charge, for the year 1893-94, were read and approved.

ALEX. PEDLER,

Chairman.

REPORT

OF

THE TRUSTEES OF THE INDIAN MUSEUM

FOR THE YEAR 1893-94.

THE following report on the administration of the Indian Museum Trust, during the year ending 31st March 1894, is submitted for the information of His Excellency the Right Hon'ble the Governor General in Council.

MEMBERS.

At the commencement of the year the Board of Trustees consisted of the following Members :—

- | | |
|---|---|
| 1. O. T. BARROW, Esq., I.C.S., <i>Accountant-General of Bengal.</i> | |
| 2. MAHARAJA SIR JOTINDRO MOHUN
TAGORE, K.C.S.I. | <div style="font-size: 3em; line-height: 1; padding: 0 5px;">{</div> <div style="text-align: center;">Nominated by the
Governor-General in
Council.</div> |
| 3. J. ELIOT, Esq. | |
| 4. COLONEL H. R. THUILLIER, R.E.,
C.I.E. | |
| 5. HON'BLE H. H. RISLEY, I.C.S., C.I.E. | |
| 6. BRIGADE-SURGN. LT.-COL. G. KING,
C.I.E., F.R.S., LL.D. | <div style="font-size: 3em; line-height: 1; padding: 0 5px;">{</div> <div style="text-align: center;">Nominated by the
Lieutenant-Governor
of Bengal.</div> |
| 7. HON'BLE C. E. BUCKLAND, I.C.S. | |
| 8. W. C. MACPHERSON, Esq., I.C.S. | |
| 9. A. SIMSON, Esq. | |
| 10. PRINCE JAHAN KADER MIRZA MAHOM-
ED WAHED ALI BAHADUR, K.C.I.E. | |
| 11. BABU OMRITA NATH MITTER. | |

REPORT OF THE TRUSTEES

12. SURGEON LT.-COL. D. D. CUNNINGHAM, F.R.S., C.I.E.	} Nominated by the Asiatic Society of Bengal.
13. DR. A. F. R. HOENLE.	
14. C. LITTLE, Esq.	
15. DR. MAHENDRA LALL SIRCAR, C.I.E.	
16. A. PEDLER, Esq., F.R.S.	} Elected by the Trustees.
17. COLONEL J. WATERHOUSE, B.S.C.	
18. COLONEL A. W. BAIRD, R.E., F.R.S.	
19. SURGEON-MAJOR J. SCULLY.	
20. DR. W. KING.	
21. G. A. GRIERSON, Esq., I.C.S.	

Changes in the Board during the year 1893-94.

On 23rd February 1894, Mr. O. T. Barrow, I.C.S., the Accountant-General of Bengal, was transferred to Bombay as Accountant-General, and Mr. G. E. Manisty, I.C.S., his official *locum tenens*, became *ex-officio* a Trustee during his absence; on 30th August 1893, His Excellency the Governor-General in Council appointed Mr. E. Thurston to the seat vacated by the Hon'ble H. H. Risley, I.C.S.; at the Meeting of the Trustees on 12th February 1894, Sir A. Croft, K.C.I.E., was re-appointed to the seat vacated by Colonel A. W. Baird, R.E., F.R.S., on his departure for England on furlough; on 14th March 1893, Surgeon-Major J. Scully tendered his resignation, and on 14th August 1893, Mr. W. Banks Gwyther, Under-Secretary to the Government of Bengal, Public Works Department, was appointed to this vacancy.

The result of these changes was that, on the 31st March 1894, the Board was composed as follows:—

1. G. E., MANISTY, Esq., I.C.S. . . Accountant-General of Bengal.

OF THE INDIAN MUSEUM.

- | | |
|---|---|
| <p>2. MAHARAJA SIR JOTINDRO MOHUN
TAGORE, K.C.S.I.</p> | <p style="font-size: 3em;">}</p> <p>Nominated by the Governor-General in Council.</p> |
| <p>3. J. ELIOT, Esq.</p> | |
| <p>4. COLONEL H. R. THUILLIER, R.E.,
C.I.E.</p> | |
| <p>5. E. THURSTON, Esq.</p> | |
| <p>6. BRIGADE-SURGEON LT.-COL. G. KING,
C.I.E., F.R.S., LL.D.</p> | |
| | |
| <p>7. HON'BLE C. E. BUCKLAND, I.C.S.</p> | <p style="font-size: 3em;">}</p> <p>Nominated by the Lieutenant-Governor of Bengal.</p> |
| <p>8. W. C. MACPHERSON, Esq., I.C.S.</p> | |
| <p>9. A. SIMSON, Esq.</p> | |
| <p>10. PRINCE JAHAN KADER MIRZA
MAHOMED WAHED ALI BAHADUR,
K.C.I.E.</p> | |
| <p>11. BABU OMRITA NATH MITTER.</p> | |
| | |
| <p>12. SURGEON LT.-COL. D. D. CUNNINGHAM,
F.R.S., C.I.E.</p> | <p style="font-size: 3em;">}</p> <p>Nominated by the Asiatic Society of Bengal.</p> |
| <p>13. DR. A. F. R. HERNLE.</p> | |
| <p>14. C. LITTLE, Esq.</p> | |
| <p>15. DR. MAHENDRA LALL SIRCAR, C.I.E.</p> | |
| <p>16. A. PEDLER, Esq., F.R.S.</p> | |
| | |
| <p>17. COLONEL J. WATERHOUSE, B.S.C.</p> | <p style="font-size: 3em;">}</p> <p>Elected by the Trustees.</p> |
| <p>18. SIR A. CROFT, K.C.I.E.</p> | |
| <p>19. W. BAKES GWYTHRE, Esq.</p> | |
| <p>20. DR. W. KING.</p> | |
| <p>21. G. A. GRIEBSON, Esq., I.C.S.</p> | |

Meetings have been held monthly throughout the year.
The Annual General Meeting was held on 8th May 1898, at

REPORT OF THE TRUSTEES

which the following Officers of the Trust and Members of the Finance and Visiting and Economic and Art Committees were appointed for 1893-94:—

HONORARY OFFICERS:

FRIGADE-SURGEON LT.-COL. G. KING, C.I.E., F.R.S., LL.D., *Chairman*.
A. PEDLER, Esq., F.R.S., *Vice-Chairman*.
DR. W. KING, *Honorary Secretary*.
A. PEDLER, Esq., F.R.S., *Honorary Treasurer*.

COMMITTEES:

Finance and Visiting Committee.

C. LITTLE, Esq.
COL. J. WATERHOUSE, B.S.C.
COLONEL A. W. BAIRD, R.E.,
F.R.S.
BABU OMEITA NATH MITTER.
DR. A. F. R. HOERLE.
DR. MAHENDRA LALL SIRCAR,
C.I.E.
O. T. BARROW, Esq., I.C.S.
G. A. GRIERSON, Esq., I.C.S.

Economic Committee.

BABU OMEITA NATH MITTER.
C. LITTLE, Esq.
COLONEL J. WATERHOUSE,
B.S.C.
COLONEL A. W. BAIRD, R.E.,
F.R.S.
G. A. GRIERSON, Esq., I.C.S.
DR. MAHENDRA LALL SIRCAR,
C.I.E.

The Honorary Officers are also *ex-officio* Members of all Committees.

The Finance Committee has held ten meetings, at which the accounts have been examined and the expenditure controlled.

During the year there were held one meeting of the Visiting Committee, and ten of the Economic Committee, at which matters relating to the internal management of the various Sections were discussed and orders formulated for

OF THE INDIAN MUSEUM.

subsequent confirmation by the General Committee of the Trustees.

In addition to the ordinary meetings of the General Committee two special meetings were held: one in connection with the Conference held in the Indian Museum in regard to the continued management of the Economic and Art Section by the Reporter on Economic Products to the Government of India; and the other, in connection with the proposed new wing for the Indian Museum and the offices of the Geological Survey of India. Both these subjects are fully dealt with in the Administration Report.

GENERAL ADMINISTRATION.

In the last Annual Report reference was made to the great loss which the Trustees had sustained by the death, on the 6th of May 1893, of their Superintendent, Mr. Wood-Mason, who had been connected with the Museum since 1869, and a history of his scientific work in connection with the Museum was incorporated in that report.

2. On receipt of the intelligence of Mr. Wood-Mason's decease, Surgeon-Captain A. Alcock, who had been officiating as Superintendent, was unanimously confirmed in that post by the Trustees. This appointment subsequently received the sanction of His Excellency the Governor-General in Council.

3. The arrangement by which the Economic and Art Section was placed in executive charge of the Reporter on Economic Products to the Government of India has been continued throughout the year.

4. Mr. Edgar Thurston was in charge of this Section till the 23rd November 1893, on which date he made over charge

REPORT OF THE TRUSTEES

to Dr. George Watt in accordance with the Proceedings of a Conference held at the Indian Museum on the 17th November 1893, at which were present Sir E. C. Buck, Secretary to the Government of India, Revenue and Agricultural Department, Dr. G. King, Chairman of the Trustees, and Mr. Alex. Pedler, Vice-Chairman of the Trustees.

5. The conditions of the agreement, which were afterwards unanimously approved by the Board of Trustees, and also confirmed by the Governments of India and Bengal, are recorded below in full:—

The Economic Section of the Imperial Museum, including the Economic Artware and Ethnological Galleries, shall be under the charge of the Reporter of Economic Products up till January 1st, 1896, provided that on notice being given either by the Trustees or by the Government of India, the arrangements detailed below will be subject to revision.

2. The staff of the Economic Section of the Museum, including the Assistant Curator (Mr. Mukerji), will be under the orders of the Reporter on Economic Products for all Museum purposes.

3. The staff of the Economic Section of the Museum under the general superintendence and orders of the Reporter on Economic Products, will be responsible to the Trustees for the arrangement of specimens, curating of specimens, and publication of catalogues of the specimens in the Museum, and for all such work as is ordinarily done in Museum.

4. The Trustees should be kept informed and be consulted by the Reporter as to the general arrangements which he is making with regard to the collections, and the Trustees will have the power of deciding on the general method in which such work shall be carried out. Details as to management will be dealt with by the Reporter on his own responsibility.

5. All important correspondence in connection with the subjects mentioned in paragraph 3 shall be reported to the Trustees, and in all cases when the correspondence deals with Governments, Agents or bodies outside the Museum itself, the correspondence shall be conducted through the Trustees and the Museum Office.

OF THE INDIAN MUSEUM.

6. The pay of the staff of the Economic Section will be disbursed, and the contingent grant from the Government of Bengal drawn through the Trustees' office.

7. The accounts of this section shall be kept by the Reporter on Economic Products and submitted to the Trustees.

8. The Reporter shall have power to grant casual leave to the staff of the Economic Section under his orders up to the usual limit. All other kinds of leave will have to be previously sanctioned by the Trustees.

9. The Reporter on Economic Products will be free to proceed on tour at all times subject to the control only of the Government of India, but will notify to the Trustees when he is leaving Calcutta for a longer period than seven days, and shall state what officer will be in charge in his place during his absence.

10. The Economic Section of the Museum will be visited by the Visiting Committee of the Trustees, and of such visits notice will be given, when the Reporter, if present in Calcutta, will be asked to personally explain the nature of the work which is being carried on in this section. The Reporter may also be invited to attend either the Visiting Committee Meetings or the General Meetings of the Trustees, but he will not be a Trustee of the Museum.

11. The Reporter will submit to the Trustees Quarterly and Annual Progress Reports dealing with the Museum Collections under his charge.

12. All arrangements in connection with the work of collection of products for the Imperial Institute, the supply of additional *Economic* Products to the Museum, and the collection and publication of fresh information on Economic subjects, shall be conducted by the Reporter on Economic Products, subject to the orders of the Government of India in the Revenue and Agricultural Department, and shall not be in any way controlled by the Trustees.

13. All correspondence in connection with the work detailed in paragraph 12 shall be addressed direct to the Reporter, and shall not pass through the Trustees or the Museum office.

14. The Reporter will be responsible to the Government of India only for the disposal of the funds provided for the purposes referred to in paragraph 12.

REPORT OF THE TRUSTEES

15. For carrying out the purposes mentioned in paragraph 12 the Government of India will provide the necessary staff which will work so far as may be required in the Museum buildings where the Reporter's office will also be. In cases of necessity the staff of the Economic Court of the Economic Section of the Museum may be utilized for the work mentioned in paragraph 12 by the Reporter.

6. The Trustees regret to again record that no actual progress was made during the year in respect of the erection of the new wing, alluded to in paragraph 5 of last year's report, for offices, studies, laboratories, store-rooms etc., for the Indian Museum and the Geological Survey of India. The subject however, received the serious attention and careful consideration of the Trustees, and as the result of some correspondence and discussion with the Government of Bengal as to the amount of accommodation to which the Trustees were entitled, and as to their right to claim land in the direction of Chowringhee Lane, the Trustees ultimately resolved to accept as a final settlement, in satisfaction of all outstanding claims against the Government of Bengal, the offer of that Government to provide a building on Trust land containing accommodation amounting to 35,000 square feet, at an estimated cost of Rs. 2,50,000, and also to provide—

	<i>Rs.</i>
(a) Fittings to the building to cost . . .	18,000
(b) New servants' houses . . .	16,500
(c) Carriage road from Chowringhee . . .	3,500

raising the total cost to Rs. 2,88,000. The Museum is urgently in need of additional accommodation, and the Trustees are glad that there is an immediate prospect of the wing being taken in hand and completed. It is with feelings of great pleasure that the Trustees look forward to the completion of

OF THE INDIAN MUSEUM.

this building, as the insufficient accommodation at their disposal has been a source of great anxiety.

7. Another scheme, which received the attention of the Board, was put forward by Mr. G. A. Grierson in respect of (i) an exchange of casts of objects of archæological interest between the Lahore and Indian Museums, and (ii) the collection of a series of facsimile casts of all the Asoka inscriptions, commencing with those in Bengal, with the object of lodging them in a special court in the Indian Museum to be called the Asoka Court. A strong representation of the matter was made to the Government of Bengal, and it is gratifying to learn that His Honour the Lieutenant-Governor has been pleased to support the Trustees' scheme.

ZOOLOGICAL AND ARCHÆOLOGICAL SECTION.

8. It affords the Trustees great pleasure to report that there has been, during the whole year, unusual activity in the arrangement and preparation of collections for exhibition in the public galleries, opportunity having been taken at the same time to replace old and worn examples by better specimens.

9. The collections in the Invertebrate Gallery have been much increased and improved, and in fact the gallery has been practically remodelled during the year. It now contains a perfectly arranged and well-named collection, including examples of many families and orders hitherto not represented. The Trustees thoroughly appreciate the important and admirable work which the Superintendent, Dr. Alcock, has done in this gallery, and they take this opportunity of expressing their thanks to him for his efforts.

REPORT OF THE TRUSTEES

10. Dr. Alcock's labours were not, however, devoted exclusively to the Invertebrate Gallery, for progress has been made in the other galleries as well. In the Mammal Gallery, a fine mounted skeleton of a Gayal (*Bos frontalis*) and of a Leopard have been added to the collections—the latter having been mounted as a teaching preparation, every bone being named. In the Archaeological Gallery, the Gandhara sculptures, presented some years ago by the Punjab Government, have been laid out, and a further series of Fatehpur Sikri casts have been mounted for exhibition in the Inscription Room.

11. The preparation of collections of Insects for exhibition in the Bird Gallery is now in progress, and for this purpose the gallery has been fitted up with a double row of floor cases. The Mammal Gallery has also been provided with a case for the exhibition of osteological illustrations of the homologies of the limbs of Mammals. The Reptile Gallery has been furnished with a number of cases for the exhibition of Snakes, Lizards and Amphibia. The Invertebrate Gallery has also been supplied with four new cases for extending the exhibits of Crustacea and Mollusca and for the concise illustration of biological generalizations.

12. The Trustees are pleased to observe that one of the principal features which characterises the arrangements adopted by Dr. Alcock in the exhibition of the collections displayed in the public galleries, is to make them as thoroughly educational as possible, and for this purpose dissections, preparations, and diagrams illustrating the morphology, etc., of the principal groups of animals have been prepared and exhibited. And it is satisfactory to note that these arouse considerable interest among the more intelligent visitors to the Museum.

OF THE INDIAN MUSEUM.

13. Another important portion of the work done by the Superintendent during the year consists in the publication, in the Journal of the Asiatic Society of Bengal and in the Annals and Magazine of Natural History, of descriptions of many species of which the types form part of the Museum collections. Another fasciculus of the "Illustrations of the Zoology of Her Majesty's R. I. M. Surveying Steamer *Investigator*" has also been issued.

14. In the important work of preparing Catalogues and Guides much progress has been made. Dr. Alcock's valuable "Guide to the zoological collections in the Invertebrate Gallery" was in the press before the close of the year, and has since been published. A large amount of material has also been brought together for the preparation of Catalogues of the Crustacea, Corals, and Fishes. Two more plates have been issued for the first-mentioned catalogue; but the catalogue itself has not advanced further than the accumulation of several thousands of references which have been systematically arranged. Parts I and II of Mr. Rodgers' Catalogue of Coins in the Indian Museum were nearly completed before the close of the financial year. Mr. Fleming's first supplement to the Library Catalogue was issued during the year and he made some progress in the manuscript of the second supplement.

15. The investigations in Economic Entomology have been continued; but, as in past years, research has been restricted chiefly to the rearing and study of insects injurious to crops, which have been forwarded to the Museum from different parts of India. At an Agricultural Conference held by the Department of Revenue and Agriculture at Simla in October 1893, an opinion was expressed that this work should be extended,

REPORT OF THE TRUSTEES

and that more satisfactory and beneficial results might be obtained were Mr. Cotes permitted to travel so as to enquire into insect pests on the spot, and personally to examine the conditions under which damage is done by them. The Trustees concur in the opinion expressed by the Conference, and on the matter being represented to them by the Government of India, they consented to allow Mr. Cotes to undertake such tours on the condition that their permission should first be obtained in the case of each tour, and that the cost of such tours would be met by the Revenue and Agricultural Department. It was also decided that the period of Mr. Cotes's tours should not exceed six months annually, inclusive of the two months which he devotes to lectures at the Forest School, Dehra Dun.

16. Two numbers of the serial called "Indian Museum Notes" were issued, one passed through the Press, which has since been published, and three others were prepared during the year. Special mention may be made of the fourth number of Volume III, which is now in the Press, and which is devoted exclusively to Insects and Mites injurious to the Tea Plant in India. This report, which was specially undertaken at the request of the Government of India, may, it is hoped, be found useful to Tea Planters and others interested in the Tea Industry.

The Hand-book on Indian Silk and Silk Insects referred to in paragraph 10 of last year's report was passed through the Press and published during the year. Mr. Cotes also prepared out of office hours, for the Forest Department, an elementary Manual of Zoology for use as a text-book at the Forest School, Dehra Dun.

OF THE INDIAN MUSEUM.

17. The specimens actually acquired during the year under review amount to 5,055. This is an increase on the number received during the previous year. The Trustees thoroughly appreciate the efforts which are being made by their Superintendent to bring on to the registers of the Museum the accumulations of past years. It therefore affords them great satisfaction to observe that no less than 22,210 specimens were in this way registered during the year, thus bringing up the total number of specimens registered in the annual list of accessions to an aggregate of 27,265.

18. One of the direct results obtained by the preparation of such a large number of specimens for exhibition, and the registration of accumulation of past years, is that systematic arrangement of the reserve collections is thus facilitated. As an illustration of this it may be mentioned that the entire collection of Moths is now in process of arrangement according to the system adopted by Mr. G. F. Hampson in his recently published work which forms part of the series of the "Fauna of British India."

19. Among the noteworthy accessions may be mentioned the fine series of Fishes and Marine Invertebrates collected by the Officers of Her Majesty's R. I. M. Surveying Steamer "*Investigator*"; the large and valuable collection of Bird skins from South China, presented by Mr. C. B. Ricketts of Hongkong; the Echinoderms and Calcareous Sponges presented by the University of Cambridge; the Shells given by Mr. Fulton; and the small collection of Mammals, Fishes and Crustacea collected in North Cachar and purchased from Mr. Partridge.

20. Among the additions to the Entomological Section the following are worthy of special mention: the suite of Coccidæ

REPORT OF THE TRUSTEES

and Acrididæ from the Madras Presidency ; specimens of the Potu Fly of the N.-W. Himalayas ; and of *Cossus* (?) *cadamba* destructive to teak in Travancore ; a new species of Cercopidæ and a new species of Coccidæ—the former being injurious to maize and the latter to garden plants in Ceylon ; *Xylotrechus quadripes*—the destructive coffee borer of Southern India ; a species of *Aleurodes* destructive to orange trees in Kulu ; the wheat pests of the Chindwara district ; specimens of the species injurious to sugarcane in Bombay, to tea in Assam, and to mustard in Golaghat ; and the microlepidopterous insect which was found to attack stored rice in Lahore.

21. In the Archæological section the additions calling for special mention are : the war medals, clasps, and stars presented by the Military Department of the Government of India ; a small collection of war medals transferred from the Economic and Art Section ; the coins acquired (i) under the Treasure Trove Act, (ii) by presentation, and (iii) by purchase ; the archæological specimens collected by Babu P. C. Mukherji ; the collection of photographic negatives forwarded to the Museum by the Archæological Survey of Bombay ; and the series of photographic negatives illustrative of the Archæology of Orissa.

22. The Trustees have again to record their warm thanks to the several volunteers who, during the year under review, have benefited the Museum by their advice and assistance in various branches of Archæology and Zoology. To Dr. A. F. R. Hornle, the Trustees are especially indebted for the labour and time he has devoted to the editing of the Coin Catalogue, for practically preparing the plates illustrating the Catalogue, and for his help in all matters connected with numismatics.

OF THE INDIAN MUSEUM.

To Dr. A. R. Anderson of the R. I. M. Survey Steamer "*Investigator*", the Trustees are no less indebted for his labours in working at the collection of Echinoids, and for so heartily co-operating with their Superintendent in the mounting and exhibiting of specimens in the Invertebrate Gallery. Among other voluntary labourers may be mentioned Professors Ray Lankester, F. E. Schulze, and Mr. W. L. Selater, who are still respectively occupied in working on the Cephalopodous Mollusca, the Hexactinellid Sponges and the Alcyonarian Corals. Amongst Entomologists who have worked for the Museum are Drs. Henri de Saussure and E. Bergroth, Herr F. M. van der Wulp, Messrs. G. B. Buckton, F. Moore, L. Lethierry, F. A. Skuse, R. Newstead, G. C. Dudgeon and P. Cameron.

23. In this connection the Trustees would acknowledge their indebtedness to Dr. G. King for the collection of plants from the Botanic Garden which he has supplied to the Museum and which now adorn the quadrangle.

24. The Trustees desire to express their gratitude to the Government of Bengal for having continued, during the year under review, their handsome special grant for the exploration of Archaeological remains in Bengal. In paragraph 13 of the Trustees' last report it was stated that, during the year now under review, arrangements would be made for utilizing this grant in securing for the Museum a representative suite of the ancient sculptures of Orissa, and more especially in bringing to Calcutta the fallen architrave of the Kanarak Kemple known as the *Navagraha* stone. It was reported, however, that local religious sentiment was against the removal of that stone, and this report having been confirmed by a Committee of Hindu gentlemen appointed to enquire into the matter,

REPORT OF THE TRUSTEES

it was decided to abandon the proposal. It was then decided that archæological exploration in Orissa should, in the meantime, be discontinued, and a suggestion was made that Mr. P. C. Mukherji, the Archæologist, paid from the Bengal Government grant, should be deputed to Behar for the purpose of making excavations and carrying on researches in the places indicated by Dr. Waddell in his pamphlet on the "Discovery of the exact site of Asoka's classic capital of Pataliputra." Finally it was decided that it would be better to defer this work until a more experienced Archæologist than Mr. Mukherji could be put in charge of it, and that Mr. Mukherji might more profitably be occupied in collecting for the Museum archæological specimens in Chota Nagpore and some parts of Behar. The result of Mr. Mukherji's collecting tour was not so satisfactory as the Trustees had hoped, only nine out of the relics brought by him to the Museum being of much value. These nine were exhumed at Patharghatta, near Colgong. The rest of Mr. Mukherji's time during the year was occupied in writing his Orissa Report and in completing the pencil drawings illustrating it and in revising his Behar Report of the previous two years. Mr. Mukherji was also entrusted by the Government of Bengal with the work of supplementing and correcting, where necessary, the List of Ancient Monuments of Bengal drawn up by the Public Works Department.

25. Surgeon-Captain A. Alcock, the Superintendent, was in charge of the Zoological and Archæological Section during the year, and in addition to these duties he also performed the work of the Deputy Superintendent for three months during the absence of that officer.

OF THE INDIAN MUSEUM.

26. Mr. E. C. Cotes, Deputy Superintendent, was in charge of the Entomological Department during the year, with the exception of the following periods : (1) from 4th to 31st August 1898, when he was on privilege leave, and (2) the whole of the months of September and October, when he was on deputation at the Forest School, Dehra Dun, for the purpose of delivering a course of lectures on Zoology.

27. Mr. R. L. Chapman, who officiated as First Assistant, was in charge of the Trustees' Office during the year, with the exception of a period of three months during which he was on privilege leave.

28. Mr. O. L. Fraser, 2nd Assistant, was in charge of the stores and of the reserve collections deposited in the tin sheds, and during the year he completed several osteological preparations.

29. Mr. H. W. Fleming, Librarian, although officiating as Registrar, remained in charge of the Library and Superintendent's Office throughout the year, with the exception of three months, during which period he officiated for Mr. Chapman in the Trustees' Office while the latter was on privilege leave.

30. Mr. H. B. Perie, Personal Assistant to Superintendent, although officiating as Librarian and Head Clerk, retained charge of his own duties throughout the year, with the exception of three months, during which period he officiated for Mr. Fleming, when the latter was transferred to officiate as Registrar in the Trustees' Office.

31. The Trustees have again to record their high appreciation of the excellent work done by the staff of the Zoological and Archaeological Section during the year.

REPORT OF THE TRUSTEES

ECONOMIC AND ART SECTION.

32. This section was in charge of Mr. E. Thurston until the 23rd November 1893, on which date Dr. George Watt assumed charge of it.

Dr. Watt has devoted considerable time to the study of the present arrangements, and to the maturing of plans for the future operations, of this Section.

33. In the Art and Ethnological Courts some re-arrangement of specimens has been effected, and in the Economic Court special arrangements are being made so that the specimens shall be more easily seen by visitors. One of the bays of the last-mentioned Court is being fitted up on a new principle for the approval of the Trustees.

34. Dr. Watt attended the Art Conference held at Lahore, and from thence he proceeded on tour to Guzerat and Kathiawar. He reports that he has been engaged in an enquiry into some points in the Botany of the cotton plant, and states that he has now under preparation a report, which he intends to publish as soon as the remaining portions of the Indian cotton area shall have been explored. Dr. Watt has enriched the Museum collection by bringing back a collection of specimens illustrating the different forms of the cotton plant as well as samples of the raw staples. In addition to this collection, he has brought some other objects of economic value. The Trustees are indebted to, and desire to express their thanks to, the Bombay Government and to the several gentlemen mentioned by Dr. Watt as having afforded him assistance in the prosecution of his investigations.

OF THE INDIAN MUSEUM.

35. During the year under review 16 specimens were added to the Art Court, 49 to the Ethnological Court, and 140 to the Economic Court; while 198 specimens of commercial and 17 of index products were sent to the Imperial Institute, and 108 specimens to the Antwerp Exhibition.

36. Among other improvements initiated during the year may be noticed changes in the system now adopted in the registration and labelling of specimens, in the issue of the "Hand-books on Commercial Products" and "Agricultural Ledgers", and in the procedure for supplying specimens to the Imperial Institute.

37. Mr. T. N. Mukherji, Assistant Curator, remained in charge of the section during the absence on tour of the Reporter on Economic Products.

38. The Trustees record their commendation of the useful work done by the staff of the Economic and Art Section.

TRUSTEES' OFFICE.

39. The Trustees are glad to record that the recommendation referred to in paragraph 24 of last year's report, for raising the pay of the Assistant Secretary from Rs. 300 rising to Rs. 500, met with the approval and sanction of Her Majesty's Secretary of State, who also permitted Mr. Chapman to draw the maximum pay.

40. The Officiating First Assistant, Mr. R. L. Chapman, remained in charge of the Trustees' Office throughout the year, with the exception of three months, when he was on privilege leave, during which period Mr. Fleming officiated as Registrar, being placed in charge of the Trustees' Office.

REPORT OF THE TRUSTEES OF THE INDIAN MUSEUM.

Mr. Chapman conducted the work with his usual zeal and ability, and the duties of the office were satisfactorily performed by Mr. Fleming during Mr Chapman's absence.

41. The accounts for the year have been duly audited and passed. An abstract of the receipts and expenditure in both Sections is appended.

THE COLLECTIONS.

42. So far as is known the collections are all in good order and preservation.

C. LITTLE,

Honorary Secretary.

ALEX. PEDLER,

Chairman.



REPORT OF THE TRUSTEES

Abstract of Receipts and Expenditure of the Zoological and 1893 to 31st

RECEIPTS.					
	R	a.	p.	R	a. p.
India Government grant for pay of non-gazetted establishment and personal allowance for Second Assistant to Superintendent	13,323	3	7		
India Government grant for non-gazetted officiating appointments	720	0	0		
India Government grant for allowance to menials on account of dearness of food grains	250	12	10		
				14,294	0 5
India Government grant for contingent charges for the year 1893-94	14,635	0	0		
Savings on gazetted establishment, 1892-93	2,446	15	2		
Savings on non-gazetted establishment, 1892-93	1,797	6	6		
				18,879	5 8
India Government special grant on account of the compilation of a Catalogue of the Indian Museum Coins . . . . .	...			2,000	0 0
Bengal Government special grant for collecting objects of Archaeological interest in Behar and Orissa . . . . .	...			3,500	0 0
Sundry petty receipts . . . . .	...			786	10 11
TOTAL RECEIPTS . . . . .	...			39,460	1 0
Opening balance of Suspense Accounts, 1st April 1893	1,310	7	9		
Opening balance at Bank of Bengal, 1st April 1893:—					
Bengal Government Archaeological grant	1,796	0	2		
Zoological and Archaeological Section General Funds	787	9	8		
Cash in hand, 1st April 1893	87	4	7	3,931	6 2
	...			43,391	7 2

H. W. FLEMING,
Officiating Registrar.

OF THE INDIAN MUSEUM.

*Archæological Section of the Indian Museum from 1st April
March 1894.*

EXPENDITURE.					
	R	a.	p.	R	a. p.
Pay of non-gazetted establishment	12,123	3	7		
Personal allowance to Second Assistant to Superintendent	1,200	0	0		
Cost of non-gazetted officiating appointments	720	0	0		
Allowance to menials for dearness of food grains	260	12	10		
				14,294	0 5
Temporary establishment . . . . .	...			606	5 10
Books for Library . . . . .	...			3,533	8 8
Printing . . . . .	...			1,986	6 0
Purchase of specimens . . . . .	...			1,215	6 0
Postage . . . . .	...			233	12 0
Unusual charges:—					
(a) Bengal Archaeology	4,538	12	3		
(b) Futehpur-Sikri Casts	18	12	0		
(c) Unexpended balance of Photo. grant refunded to Government	100	0	0		
(d) Compilation of a Catalogue of the Indian Museum Coins	2,000	0	0		
(e) Ethnological photos for Hof Museum	80	0	0		
(f) Grant to Mr. E. L. Chapman for out-of-pocket expenses in visiting Museums in England with the object of obtaining information and studying their methods of administration	100	0	0		
				6,892	8 3
Packing and freight . . . . .	...			1,215	11 6
Furniture (cases, jars, etc.) . . . . .	...			5,184	6 5
Drugs (alcohol, naphthaline) . . . . .	...			909	10 1
Stationery . . . . .	...			649	6 3
Special Museum stores . . . . .	...			642	15 8
General Museum stores and contingencies . . . . .	...			551	10 3
TOTAL EXPENDITURE . . . . .	...			37,805	10 11
Closing balance of Suspense Accounts, 31st March 1894 (to be recovered or accounted for in 1894-95) . . . . .	...			699	4 1
Closing balance in Bank, 31st March 1894:—					
Bengal Government Archaeological grant	757	3	11		
Zoological and Archaeological Section General Funds	4,159	6	6		
				4,916	10 5
Cash in hand . . . . .	...			89	13 9
				49,391	7 2

OMRITO NATH MITTER,
Officiating Honorary Treasurer.

REPORT OF THE TRUSTEES

Abstract of Receipts and Expenditure of the Economic 1893 to 31st

RECEIPTS.				
	R	a. p.	R	a. p.
Bengal Government grant for non-gazetted establishment	5,422	2 10		
Bengal Government grant for allowance to menials on account of dearness of food grains	96	5 5	5,518	8 8
Bengal Government grant for contingencies	2,784	0 0		
Savings on non-gazetted establishment, 1892-93	190	14 1		
Petty receipts	328	3 0	3,303	1 1
			</	

Dr.

Ahsunnulla-Siarnamaye

	R	a.	p.	R	a.	p.
To Balance				7,248	4	10
" Interest on Fixed Deposit of B6,180	185	6	4			
" Interest on Fixed Deposit of B1,036-4-10	21	5	2			
" Interest on Government Security Paper of B5,000	194	4	8			
				401	0	2
				7,647	5	0

H. W. FLEMING.

Officiating Registrar.

OF THE INDIAN MUSEUM.

and Art Section of the Indian Museum from 1st April
March 1894

EXPENDITURE.					
	R	a. p.	R	a. p.	
Pay of non-gazetted establishment	5,422	2 10			
Allowance to menials for dearness of food grains	96	5 6			
			5,518	8 3	
Increment to Mr. R. L. Chapman, Assistant Secretary, @ Rs80 a month, with exchange compensation allowance from 21st November 1893 to 28th February 1894	291	6 11			
Pay of temporary establishment	436	2 9			
Purchase of specimens	975	4 10			
Furniture, cases, etc.	67	0 0			
Stationery	165	11 4			
Unusual charge— Photos for Dresden Museum	10	0 0			
Other contingencies	1,064	4 3			
			3,009	14 1	
TOTAL EXPENDITURE ON MUSEUM ACCOUNT . . . . .	...		8,528	6 4	
Collection of Ethnological specimens for Austria . . . . .	...		234	5 6	
TOTAL EXPENDITURE ON ALL ACCOUNTS . . . . .	...		8,762	11 10	
Closing Petty Suspense Account balance . . . . .	...		1	10 0	
Closing balance in Bank, 31st March 1894:— Austrian Government grant for Ethnological specimens	763	2 6			
Photo-Litho. Office (sale proceeds of Archaeological Drawings—Technical Art Series)	19	4 0			
Economic and Art Section General Funds	4,085	0 4			
			4,868	6 10*	
Cash in hand, 31st March 1894 . . . . .	...		113	9 9	
			13,746	6 5	

* Exclusive of a balance of Rs194-4-3 on account of the Ahsunnulla-Swarnamayeo Memorial Fund (see below).

Memorial Fund, 1893-94.

Cr.

	R	s.	p.	R	s.	p.
By premium, commission, etc., in purchasing Government Paper for Rs.5,000	...			286	10	3
" Amounts in Bank of Bengal :—						
(1) Government Promissory Note of 4 per cent. Loan of 1842-43	5,000	0	0			
(2) Fixed Deposit	1,037	10	0			
(3) " "	1,078	12	1			
(4) Interest on Government Promissory Note of Rs.5,000 included in the balance of the Economic and Art Section General Funds	194	4	8			
				7,360	10	9
				7,647	5	0

OMRITO NATH MITTER.

Officiating Honorary Treasurer.



REPORT OF THE SUPERINTENDENT

FOR THE YEAR 1893-94.

SUPERINTENDENT.

I have the honour to submit my Report on the progress of the Museum during the official year ending 31st March 1894.

In all of the three lines of operation that lie strictly within the province of a Museum, *viz.* :—

- (1) the collection, preservation, and systematic conservation of objects of Natural History and Archaeology ;
- (2) the preparation of Catalogues of and Guides to the collections, and of Reports on objects of peculiar interest ; and
- (3) the systematic arrangement in the Exhibition Galleries of collections suitable for the instruction and behoof of the public ;

some progress has been made ; but the chief effort of the year has been towards enlarging and improving the exhibited collections—especially those in the Invertebrate Gallery.

Before proceeding to report in detail upon the progress made under these heads, an event of the saddest importance to the Museum must be referred to—namely, the death of the late Superintendent, Mr. James Wood-Mason.

REPORT OF THE SUPERINTENDENT,

Mr. Wood-Mason left for Europe in a very bad state of health on the 5th April, and early in May a telegram was received from London with the sorrowful intelligence that he had died at sea on the 6th of the latter month. As it occurred only just within the limits of the present year this sad event was suitably noticed in the Trustees' Annual Report for the year 1892-93; and in referring to it the present Superintendent can only repeat the opinion there expressed that by the death of Mr. Wood-Mason the Trustees have untimely lost a valuable servant and Science a single-hearted and devoted minister.

I. THE CURATION OF COLLECTIONS.

The actual acquisitions number 5,055 specimens; but as a great deal of time has been spent in naming, and labelling and registering specimens which have accumulated during past years and have not apparently been noticed in previous Annual Reports, it has seemed only right to include these also as additions. These additions to the Registers, or additions to the systematized collections number 22,210 specimens, so that the total number of registered additions during the year under review is 27,265.

Of the acquisitions the most important are the following:—

A.—GENERAL ZOOLOGY.

- (i) A large and very valuable collection of well-preserved Fishes and Marine Invertebrates partly from the Laccadive Sea, but chiefly from the Bay of Bengal, collected during the year by the Royal Indian Marine Survey Steamer *Investigator*.

INDIAN MUSEUM.

- (ii) A large collection of Bird skins from South China presented by Mr. C. B. Rickett of Hongkong.
- (iii) A collection of named Calcareous Sponges from Europe presented by the University of Cambridge in exchange for duplicates of the *Investigator* collection.
- (iv) A collection of named European Echinoderms presented by the University of Cambridge in exchange for *Investigator* duplicates.
- (v) A collection of named land, fresh-water and marine Shells from Mr. Fulton of London in exchange for duplicates of the *Investigator* collection of Mollusca.
- (vi) A collection of small Mammals and of fresh-water Fishes and Crustacea from N. Cachar, purchased.

B.—ENTOMOLOGY.

The entomological additions of interest are enumerated in the report of the Deputy Superintendent.

C.—ARCHÆOLOGY.

- (i) A complete set of silver and copper coins of the Baroda Mint ;
- (ii) a collection of war medals, clasps and stars presented by the Government of India, Military Department ;
- (iii) several small Treasure Trove collections apportioned by the Governments of Bengal, of Bombay, of the Punjab, of the Central Provinces, and of Assam ;
- (iv) a number of rare or unique coins purchased ;
- (v) a collection of photographic negatives presented by the Archæological Survey of Bombay ; and

REPORT OF THE SUPERINTENDENT,

- (vi) the small collection of archæological relics made by Babu P. C. Mukerjee at the charges of the Government of Bengal, chiefly in the Bhagalpur District.

Of the zoological acquisitions the following, being either types of newly discovered species, or new to the Indian record, or else new or rare to the Trustees' collection deserve special notice:—

AVES.

A pair of eggs of the Sea Osprey (*Pandion haliaetus*, L.) purchased.

PISCES.

Hoplostethus mediterraneum, C. and V.; *Samaris cristatus*, Gray; *Scopelus dumerilii*, Blkr.; *Halosaurus mediorostris*, Gthr.; and the following types:—

Thyrsites bengalensis.

Lophiusutilus.

Lophius lugubris.

Halientea fumosa.

Bathypercis platyrhynchus.

Peristethus rivers-andersoni.

Physiculus argyropastus.

Neobythites steaticus.

Glyptophidium macropus.

Bathygadus furvescens.

Macrurus flabellispinis.

Macrurus pumiliceps.

Solea umbratilis.

Aphoristia trifasciata.

Chascanopsetta lugubris.

INDIAN MUSEUM.

Chlorophthalmus corniger.

Diplophos sp.

Odontostomus atratus.

Congromuræna squaliceps.

Congromuræna musteliceps.

Congromuræna nasica.

Xenomystax trucidans.

Nemichthys acanthonotus.

Triacanthodes ethiops.

MOLLUSCA.

Xenophora solaris, L.; *Natica globosa*, Ch.; *Rostellaria delicatula*, Nev.; *Leptoconus insculptus*, Kien; *Rhizoconus ermineus*, Born.; *Fusus turriculus*, Kien; *Modiola watsoni*, E. Smith; *Nucula fultoni*, E. Smith; *Verticordia eburnea*, W.-M. and Alc.; *Amussium pleuronectes*, L.; *Yoldia* a species from 285—405 fathoms, and *Limopsis* a species from 142—450 fathoms.

CRUSTACEA.

Nephrops andamanicus, W.-M.; *Nephropsis stewarti*, W.-M.; *Nephropsis carpenteri*, W.-M.; *Panulirus ornatus*, Spence Bate; *Nematocarcinus gracilis*, Spence Bate; *Nematocarcinus productus*, Spence Bate; *Nematocarcinus tenuirostris*, Spence Bate; *Glyphocrangon priononota*, W.-M.; *Glyphocrangon investigatoris*, W.-M.; *Glyphocrangon investigatoris*, var. *andamanica*, W.-M.; *Parapagurus abyssorum*, A. M.-E.; *Raninoides personatus*, Henderson; *Lyreidus chauneri*, W.-M.; *Hypophrys superciliosa*, W.-M.; *Parthenope spinosissima*, A. M.-E.; *Echinoplax pungens*, W.-M.; *Quadrella coronata*, Dana; *Leucosia unidentata*, de H.; *Parilia alcocki*, W.-M.;

REPORT OF THE SUPERINTENDENT,

Arcturus cornutus, Bedd.; *Bathynomus giganteus*, A. M.-E.;
and the following types :—

Pentacheles phosphorus.

Pentacheles andamanensis.

Pentacheles hertii.

Pentacheles gibba.

Pentacheles carpenteri.

Pentacheles cerata.

Parapagurus monstrosus.

Pylocheles scorpio.

Munida microps.

Munida lasiocheles.

Munida tricarinata.

Munidopsis scobina.

Munidopsis dasypus.

Elasmonotus cylindrophthalmus.

Galacantha investigatoris.

Calappa exanthema.

Homola megalops.

Bthusa indica.

Bthusa andamanica.

Bthusa pygmaea.

Cymonomops glaucoma.

Andania spinescens.

MYRIAPODA.

Scolopendra versicolor, Humbert.

INSECTA.

The insects of special interest are enumerated in the Deputy Superintendent's Report.

INDIAN MUSEUM.

ANNELIDA.

Hyalinæcia tubicola, O. F. Müller; *Aphrodita australis*, Baird; *Chloëia merguiensis*, Bedd.

PODAXONIA.

Cellularia peachii, Busk; *Terebratulula*, a magnificent new species from the depths of the Laccadive Sea.

ECHINODERMA.

Astropecten notograptus, Sladen; *Astropecten andersoni*, Sladen; *Astropecten granulatus*, M. and T.; *Craspidaster hesperus*, M. and T.; *Luidia forcificer*, Sladen; *Pseudarchaster mosaicus*, Alc.; *Stellaster belcheri*, Gray; *Mitteliphastrer woodmasoni*, Alc.; *Asterodiscus elegans*, Gray; *Acanthaster echinites*, E. and S.; *Zoroaster alfredi*, Alc.; *Zoroaster sea*, Alc.; *Phormosoma bursarium*, A. Ag.; *Antedon woodmasoni*, Bell; and the following types :—

Dipsacaster pentagonalis.

Calliaster mammillifer.

Astroschema flosculus.

Lovenia gregalis.

Brissoopsis oldhami.

Echinolampas castanea.

Apodogaster magna, Walsh.

Trochostoma caerulea, Walsh.

Colochirus albus, Walsh.

CŒLEENTERATA.

Caryophyllia communis, Moseley; *Caryophyllia ephyala*, Alc.; *Flabellum japonicum*, Moseley; *Flabellum laciniatum*,

REPORT OF THE SUPERINTENDENT,

Phil. ; *Lophohelia*, sp. ; *Cyathohelia axillaris*, E. and S. ; *Dendrophyllia nigrescens*, Dana ; *Balanophyllia bairdiana*, E. and H. ; *Heteropsammia geminata*, Verr. ; *Spongodes coronata*, W. and S. ; *Spongodes pustulosa*, W. and S. ; *Spongodes cervicornis*, W. and S. ; *Spongodes anguina*, W. and S. ; *Stenella spinosa* ? W. and S. ; *Calypterinus allmani*, W. and S. ; *Callistephanus koreni*, W. and S. ; *Strophogorgia verrilli*, Wright ; *Scirpearella gracilis*, W. and S. ; *Telesto arborea*, W. and S. ; *Scytalium martensii*, Köll. ; *Leptoptilum gracile*, Köll. ; *Godeffroyia elegans*, Köll. ; *Sphenopus arenaceus*, R. Hertw. ; *Sphenopus marsupialis*, Gmel. ; *Zoanthus solanderi*, Le Sueur ; *Zoanthus confertus*, Verr. ; and the following types :—

Rhizotrochus crateriformis.

Paracyathus cavatus.

Paracyathus fulvus.

Paracyathus porphyreus.

Heterocyathus wood-masoni.

Discotrochus investigatoris.

Polycyathus andamanensis.

Balanophyllia scabra.

Eupsammia regalis.

Heteropsammia aphrodes.

Cycloscriis mycoides.

Diaseris fragilis.

Bathyaetia stephanus.

Acanella fruticosa.

Umbellula kostynii.

Umbellula helbyi.

Cerianthus andamanicum.

Cerianthus tenebrarum.

INDIAN MUSEUM.

A great part of the collection of Cephalopodous Mollusca has been sent to Professor Ray Lankester, who has kindly undertaken to have them named and returned.

A large part of the collection of Hexactinellid sponges is still with Professor F. E. Schulze of Berlin.

A small portion of the collection of Alcyonarian corals is still with Mr. W. L. Sclater.

ARCHÆOLOGY.

Of the acquisitions that came under the head of Archæology the following must be specially mentioned :—

Half rupee of Ahmed Shab.

Half rupee of Shah Jahan.

Half rupee of Mahomed Tuglaq, Delhi Mint.

Silver coin of Menander with unique monogram.

II.—PUBLICATIONS.

The only official publications this year have been (1) the "First Supplementary Catalogue of Books in the Library of the Indian Museum" carefully compiled and carried through the Press by Mr. H. W. Fleming, the Librarian; and (2) "Indian Museum Notes", Volume II, No. 7, and Volume III, Nos. 1 and 2—a record of Economic Entomology—compiled and edited by the Deputy Superintendent.

Progress has been made with the Coin Catalogue, both text and plates, and the manuscript of the Second Supplementary Catalogue of the Library has been commenced, and the Librarian is to be greatly congratulated upon the care with which he keeps the records of his department so fully up to date.

REPORT OF THE SUPERINTENDENT,

During the year there has also been prepared a "Descriptive Guide to the Zoological Collections in the Invertebrate Gallery of the Indian Museum" which is now in the Press; and further bibliographic material has been collected for Catalogues of the Trustees' Collections of Crustacea, Corals, and Fishes.

It is particularly necessary to state that progress towards the much-needed catalogue of Malacostracous Crustacea has not got beyond the stage of collection of references for the correct determination and record of specimens. Many thousands of references have been collected and systematically arranged, but much still remains to be done even before references are completed.

The following non-official publications refer to the collections of this Museum and in them many of our "Types" are described, figured and established:—

- (i) On some newly-recorded Corals from the Indian Seas by A. Alcock. Journ., Asiat. Soc. Beng., Volume LXII, Part II, pages 138-149, Pl. V.
- (ii) Note on *Calypterinus allmani* by A. Alcock. Ann. Mag. Nat. Hist., (6) xii, pages 29 and 30.
- (iii) On some Actiniaria from the Indian Seas by A. Alcock. Journ., Asiat. Soc. Beng., Volume LXII, Part II, pages 151-153.
- (iv) An account of the Deep-sea Collection made by the *Investigator* during the Season 1892-93 by A. Alcock. Journ., Asiat. Soc. Beng., Volume LXII, Part II, pages 169-184, Pls. VIII and IX.
- (v) On the results of the Deep-sea Dredging during the Season 1890-91 (Report on the Crustacea con-

INDIAN MUSEUM.

tinued) by A. Alcock. Ann. Mag. Nat. Hist.,
(6) XIII, pages 225-245 and figures.

Illustrations of the Zoology of the Royal Indian Marine Steamer *Investigator*. Fishes, Part II; Crustaceans, Part II; and Echinoderms, Part I; all the drawings of which have been done in the Museum, and under the direction of Museum Officers, during the year, deserve notice here, although they are not Museum publications.

III. THE ARRANGEMENT OF THE COLLECTIONS IN THE EXHIBITION GALLERIES.

- (i) In the Mammal Gallery the only matters to report are the addition (1) of a fine mounted skeleton of a Gayal (*Bos frontalis*), and (2) of a skeleton of a Leopard mounted as a teaching preparation—every bone being named. A large case for other teaching preparations has lately been put in place and is now ready to be filled.
- (ii) From the Bird Gallery the cases of Land Shells have been removed, and arrangements are in progress for the exhibition of Insects in the middle of the Gallery.
- (iii) Reptile Gallery :—

A number of new cases have been put in position for the reception of Snakes, Lizards and Amphibia. It is hoped that these will be filled during the year now beginning.

(iv) Invertebrate Gallery :—

The entire Gallery has been remodelled and renewed : nearly 7,000 sets of specimens having been mounted and placed in position, and all the cases have been named and numbered and their contents labelled. This has been the principal work of the year.

REPORT OF THE SUPERINTENDENT,

(v) Archaeological Gallery :—

The Gandhara sculptures presented by the Punjab Government have been put in their cases, and some more Fatehpur-Sikri casts have been mounted.

(vi) The Library :—

The additions to the Library are enumerated in Appendix C.

IV. DISTRIBUTION OF WORK.

SUPERINTENDENT.

The Superintendent has carried on the usual routine and supervision, has worked daily in the Invertebrate Gallery, has written the "Guide to the Invertebrate Gallery" and the papers above enumerated as non-official publications, and has directed the preparation of the above-named parts of the "Illustrations of the Zoology of the Royal Indian Marine Steamer *Investigator*."

The Superintendent also held charge of the Entomological Department during the absence for three months, on leave and deputation, of the Deputy Superintendent.

DEPUTY SUPERINTENDENT.

The Deputy Superintendent was on privilege leave from 4th to 31st August 1893, and on deputation as Lecturer on Entomology at the Forest School, Dehra Dun, from 1st September to 31st October 1893, when he resumed charge of the Entomological Department.

During the year he arranged some of the cases of Insects for the Invertebrate Gallery, and published three parts of "Indian Museum Notes." The preparation of the latter, which refer almost exclusively to the subject of Economic Entomology, occupied the principal portion of his time.

INDIAN MUSEUM.

He furnishes the following report upon the working of the Entomological Department:—

The principal work done in the Entomological Section of the Indian Museum during the year ending 31st March 1894, has been in connection with the investigation, conducted in accordance with the orders of the Trustees, upon the subject of the insects which affect crops in India. Some advance has also been made in the arrangement and determination of the general entomological collections of the Museum. A good deal of time has further been devoted to the preparation of a series of representative specimens for exhibition in the Invertebrata Gallery where a number of cases previously reserved for the Mollusca, have been made over for the reception of insects.

As in past years, research relating to economic entomology in the Museum has been chiefly confined to the rearing and study of insects forwarded by district officers, planters and others, in connection with injury to crops in different parts of India. The species received in this manner during the past year have been fairly numerous and some increase to knowledge has resulted from their investigation. Advance, however, has necessarily been much slower than when the investigation was first started upon these lines; for whereas at first hardly anything whatever was known either of the identity or the habits of the great majority of the species which attack crops in India, now a large proportion has been recorded of what can be ascertained from the material procurable by the untrained collectors and observers through whom it is necessary, under the present arrangement, to work. It is only comparatively rarely therefore that new facts are now brought to light; for the great majority of the references which are now made to the Museum relate to species about which most of the obvious facts, likely to attract the notice of those not specially trained in entomology, have already been recorded in the pages of *Indian Museum Notes*. Progress continues, but it is necessarily slow in the absence of facilities for the collection of information by skilled observers in the field.

While the collection of fresh information, relating to the economic entomology of India, has been approaching the limit of what can profitably be done without further organization, the publication of results already

REPORT OF THE SUPERINTENDENT,

attained has been pushed on vigorously during the past year. Among the more important special publications with which progress has been made may be noticed.—A detailed account of the insects and mites which attack the tea plant in India. This has been drawn up, in accordance with the orders of the Trustees, on behalf of the Government of India, and comprises a summary of all that has been ascertained upon this extensive subject in the course of the investigation. (2) A general account of the silk and silk insects of India, prepared, in accordance with the orders of the Trustees, in consultation with the Reporter on Economic Products to the Government of India. This work, which is referred to in the last annual report of the Museum, has been seen through the press during the past year, and published by the authorities of the Imperial Institute as one of their hand-books. It comprises a short but comprehensive sketch of the silk industry and of the insects to which India is indebted for this valuable product.

Reference may further be made to a Manual of Zoology for use in the Imperial Forest School, Dehra Dun, referred to in the last annual report. This work, which was originally undertaken, with the sanction of the Trustees, on behalf of the Forest Department of India, has been completed during the year. It comprises an elementary account of the animal kingdom as it reveals itself in the forest of India where insects play a very important part in the struggle of competing organisms. To complete the list of separate works, which have recently had their origin in the investigations conducted in the Entomological Section of the Museum, mention may also be made to a series of elementary lesson sheets, originally started unofficially, and during the past year brought officially to the notice of the Secretary of State by the Government of India, and approved for further extension.

In connection with the periodical *Indian Museum Notes*, which is issued by the Trustees of the Indian Museum, and published under the authority of the Government of India in the Revenue and Agricultural Department, the progress made during the year has been as follows:—Volume II, No. 7, has been issued; Volume III, No. 3, has been put together and seen through the press; while Volume III, Nos. 4 and 5 have been put together and submitted in manuscript. Besides the usual record of the results of the enquiries conducted in the Entomological Section, and the

INDIAN MUSEUM.

special report referred to above on the insects and mites of the tea plant, these numbers contain papers by Mr. G. B. Buckton, F.R.S., Mr. F. Moore, author of extensive works on the Lepidoptera of India and Ceylon, Mons. Lethierry, Member of the Entomological Societies of France and Belgium, Herr F. M. van der Wulp, joint Editor of the *Tijdschrift voor Entomologie*, Mr. F. A. A. Skuse, Entomologist to the Australian Museum, Sydney, Mr. R. Newstead, Curator of the Grosvenor Museum, Chester, and Mr. G. C. Dudgeon, a tea planter in the Doorga. Their papers all relate to insects of economic importance in India and are mostly based upon specimens in the collection of the Indian Museum. They comprise, amongst other matters, descriptions of several new species recently added to the collection.

The number of accessions registered during the year amounts to 1,076. Besides miscellaneous specimens received from various sources these accessions comprise a number of species which have been sent to the Museum in connection with injury to crops, and which are of special interest on account of the information obtained regarding their habits and life histories. They form the subject of a number of papers in the periodical *Indian Museum Notes*. The following accessions may be singled out as offering particular features of interest :—

- (1) A small set of Coccidæ from the Madras Presidency, including the notorious Egyptian scale *Icerya aegyptiacum*, Douglas, presented by Mr. R. Newstead. The species *Icerya aegyptiacum* was not previously known to occur in India and its discovery in this country has excited considerable attention amongst entomologists. It has since been discovered in Calcutta and reared through a portion of its life history in the Museum.
- (2) Numerous Acrididæ, including the destructive Palaearctic species *Pachytylus cinerascens*, Fabr., forwarded by the Superintendent of the Central Museum, Madras, in connection with injury to crops in the Madras Presidency.
- (3) Numerous injurious forest species, including the *Potw* fly of the North-Western Himalayas forwarded by the Director of the Forest School, Dehra Dun. The *Potw* fly, which has been

REPORT OF THE SUPERINTENDENT,

determined as belonging to a little known species long since described from Assam by Dr. Becher under the name *Simulium indicum*, is new to the Museum collection. Interesting information upon the subject of its habits has now been obtained through forest officers stationed in the North-West Provinces.

- (4) *Cossus ? cadamba*, Moore. An imago furnished by Mr. F. T. Bourdillon who reared it from a borer previously recorded in *Indian Museum Notes* as attacking the teak tree in Travancore, but which had not previously been identified.
- (5) A new species of *Cercopidæ* furnished by Mr. E. E. Green in connection with injury to maize in Ceylon, described by Mons. Lethierry in *Indian Museum Notes* under the name *Delphax prylloides*, n. sp.
- (6) A new species of *Coccidæ* furnished by Mr. E. E. Green as destructive to garden plants in Ceylon, described by Mr. G. B. Buckton, F. R. S., in the pages of *Indian Museum Notes* under the name *Orthezia nacreæ*, n. sp.
- (7) *Eretes sticticus*, Linn. Specimens of the imago reported as taken in a salt lake in the crater of an extinct volcano in the Lower Chindwin District, furnished by the Honorary Secretary, Bombay Natural History Society.
- (8) *Conogethes punctiferalis*, Guen. Specimens of the imago reared in the Museum from larvae infesting the fruit of *Garuga pinnata* in Poona.
- (9) *Melasoma populi*, Linn. Specimens of the imago of this species, which does not appear to have previously been recorded from India, reared by Mr. G. C. Rogers from larvae found feeding upon the foliage of *Salix elegans* in the North-Western Himalayas.
- (10) *Dactylopius crotelia*, Bouché. A coccid not previously recorded from India furnished by Babu N. G. Mukharji who complained of it as attacking mulberry bushes in Berhampore.
- (11) *Oulex albopictus*, Skuse. A new species of *Oulicidæ* described by Mr. F. A. A. Skuse in the pages of *Indian Museum Notes* from specimens procured in Calcutta.

INDIAN MUSEUM.

- (12) *Xylotrechus quadrupes*, Chev. Specimens of the imago presented by the Honorary Secretary, Coorg Planters' Association. This species, which is the destructive coffee borer of Southern India, was not previously represented by authentic specimens in the Museum.
- (13) *Alourodes* sp. Destructive to orange trees in Kulu, furnished by Revd. M. M. Carleton.
- (14) *Leucania fragilis*, Butler. Reared in the Museum from an immature specimen forwarded by the Deputy Commissioner, Chindwara, as destructive to wheat in that district.
- (15) *Platynaspis villosa*, Muls. A coccinellid beetle not previously recorded from India, reared in the Museum from larvæ associated with *Icerya aegyptiacum* in Calcutta.
- (16) *Tetrastichus* sp. A minute Hymenopterous parasite reared in the Museum from larvæ associated with *Icerya aegyptiacum* in Calcutta.
- (17) *Aspidiotus transparens*, Green. A coccid not previously recorded from India, found on tea shoots sent to the Museum from Jalpaiguri.
- (18) *Leptispa pygmaea*, Baly. A chrysomelid beetle new to the Museum collection, forwarded to the Museum as attacking sugarcane in the Bombay Presidency.
- (19) *Chermes coccineus*, Ratz. A European species of Aphidæ not previously recorded from India, forwarded to the Museum by Mr. A. Smythies who reared it from curious cone shaped galls which have long attracted attention upon spruce fir trees in the North-Western Himalayas.
- (20) *Andraca trilochoides*, Moore. A Bombycid moth reared in the Museum from caterpillars said to have proved very injurious to tea in Assam.
- (21) *Gelechia cerealella*, Oliv. A microlepidopterous insect, not previously recorded from the plains of India, forwarded from Lahore where it was found to attack stored rice.

In connection with the accessions to the Museum during the past year reference may also be made to a considerable series of silk moths and their cocoons, collected from various sources, under the instructions of the

REPORT OF THE SUPERINTENDENT,

Trustees, on behalf of the Imperial Institute. This series is not primarily intended for the Indian Museum, but contains numerous duplicates which should be available when the Imperial Institute set has been made up.

With reference to the progress made during the year in the arrangement and determination of the general entomological collection of the Museum—the principal work, which has been done, has been in connection with the Coleoptera and Lepidoptera. The Coleoptera, which were becoming so crowded by the constant addition of new specimens as to make systematic arrangement almost impossible, have all been shifted so as to utilize the new cabinets procured some time since for the purpose; this enables sufficient space to be devoted to each family to render the incorporation of further specimens possible. In the case of the Heterocera, which were becoming similarly crowded, a beginning has been made in the rearrangement of the series, in the order adopted in the first volume of Hampson's work on the Moths of India, which represents the advance made in the classification of the Heterocera since the publication of the Indian Museum Catalogue of Moths. The work is still in progress, nine families having been completed at the close of the official year. The advance made during the year in naming the general collections has been chiefly confined to the determination of species actually received in the period under report, the most important being the specimens forwarded to the Museum in connection with injury to crops. These have been determined with the greatest care in all cases where the material available rendered this possible. Help in the determination of various species new to the collection has been received during the year from several entomologists in different parts of the world, who have also described most of the new species which have turned up in this connection.

Reference may further be made to—(1) A small set of Blattidæ and Vespidæ returned to the Museum by Dr. Henri de Saussure who has identified a number of species which could not be made out satisfactorily in Calcutta where but few type specimens can be referred to. (2) A small set of parasitic Tachinæ reared in the Entomological Section from caterpillars destructive to various crop plants in India, returned by Herr F. M. van der Walp. Amongst other specimens this set proved to contain seven new species which are described by Herr van der Walp in the pages of *Indian Museum Notes*.

INDIAN MUSEUM.

A few specimens of destructive and other species sent to various specialists for determination, have not yet been returned, but none of them are of any considerable value. The most important are— (1) some small sets of Hymenoptera and Rhynchota which it is hoped will be eventually returned by Mr. P. Cameron and Dr. E. Bergroth respectively. (2) A small series of Heteromera and other Coleoptera originally forwarded to the late Mons. de Marseul and which seem to have been lost when Mons. Marseul died.

With regard to the distribution of the work of the Entomological Section during the year. I was in charge continuously up to the 4th August and again from the beginning of November to the close of the year. During the three remaining months the Section was under the direct care of the Superintendent of the Indian Museum. The post of clerk was efficiently filled during the year by Mr. Edward Barlow who as usual kept up the register of accessions and did useful work in arranging, ticketing and comparing specimens, especially in connection with the preparation of the series for exhibition in the Invertebrata Gallery and in rearranging the moth collection. During the six years he has been working under my direction Mr. Barlow has acquired so considerable a knowledge of classificatory entomology that he can refer almost every specimen that is received to its approximate place in the series, and I desire to take this opportunity to express my hearty appreciation of the willing and intelligent help he has invariably afforded me. The post of draughtsman was industriously filled throughout the year by Babu Geerish Chundra Chuckerbutty who was, as usual, chiefly engaged in drawing specimens for reproduction in *Indian Museum Notes*. He also enlarged a number of figures, many of them originally drawn by himself, for exhibition in illustration of insects displayed in the Invertebrata Gallery. His work, which is done with a great minuteness, has already proved its value, he only lacks greater knowledge of perspective to give it a remarkable degree of verisimilitude. The post of copyist was filled throughout the year by Babu Benod Bibary Mukerji who has made an excellent and competent clerk. Of the three setters employed in the Entomological Section, Latif Rahman has acquired wonderful skill in handling fragile specimens and I have recently recommended him for promotion, Phaku Ram and Abdul

REPORT OF THE SUPERINTENDENT,

Wahidh have also worked commendably and are gradually acquiring some knowledge of their duties.

FIRST ASSISTANT TO THE SUPERINTENDENT.

Mr. R. L. Chapman continued to act as nominal First Assistant, but was exclusively engaged in the Trustees' Office.

He was on privilege leave from 8th August to 7th November 1893.

SECOND ASSISTANT TO THE SUPERINTENDENT.

Mr. O. L. Fraser held charge and issue of stores, held charge of the reserve collections stored in the "Tin shed," prepared and mounted a skeleton of a Gayal, and completed several other osteological preparations.

LIBRARIAN AND HEAD CLERK.

Mr. H. W. Fleming held the substantive appointment of Librarian, and the officiating appointment of Registrar during the year, and from 8th August to 7th November, 1893 in the absence of Mr. Chapman actually officiated as Registrar to the Trustees, his place being then taken by Mr. H. B. Perie.

As Librarian and Head Clerk Mr. Fleming worked to my complete satisfaction.

PERSONAL ASSISTANT TO THE SUPERINTENDENT.

Mr. H. B. Perie held the substantive appointment of Personal Assistant and the officiating appointment of Librarian and Head Clerk during the year, and from 8th August to 7th November, during the absence of Mr. Fleming, actually worked in the Library. Both as Personal Assistant and as Librarian Mr. Perie worked to my complete satisfaction.

INDIAN MUSEUM.

MUSEUM SUBORDINATE OFFICERS.

Mr. W. H. Smith, the Clerk to the Superintendent, Mr. C. Swaries, the Head Taxidermist, Babu Abhoya Charn Chowdhary, the Artist, and Munshi Kasimuddin all did good work.

Apprentice Taxidermist Martin also showed himself to be an intelligent and industrious worker.

V. MISCELLANEOUS MATTERS.

(1) THE MARINE SURVEY.

The Zoological Department of the Survey is so intimately connected with the Museum, being in fact at present the only properly equipped systematic surveying agency with which we are in connexion, that the report of the Progress of the Museum would not be complete without a reference to the recent work of that Department. During the year we have received from this source several thousand well-preserved specimens representing every large group of marine animals with the exception only of Mammals.

The collections are derived chiefly from the Laccadive and Maldive Seas and the Bay of Bengal, and illustrate the life both of the reefs and shallows and of the depths.

From among so much valuable material it is difficult to single out any one or two things of surpassing interest, but the following are specially worthy of mention:—(1) a new genus of deep-sea Flat-fishes, (2) the Berycoid Fish *Hoplostethus mediterraneum* hitherto known only from the Mediterranean and Japan, (3) a species of *Thyrssites*—a genus of fishes hitherto unknown in Indian waters, (4) a

REPORT OF THE SUPERINTENDENT,

deep-sea species of *Triacanthodes*—a fish also new to India (5) a species of *Chlorophthalmus*—another genus now for the first time recorded from India, (6) a deep-sea representative of the macrurous crustacean genus *Arctus*, and (7) a large and beautiful series of the hitherto unique deep-sea crawfish *Panulirus angulatus*, (8 and 9) deep-sea species of the crab genera *Mursia* and *Calappa*, the latter being truly remarkable in size, (10) a remarkably fine *Homola*, and finally (11) a species of *Terebratula* of magnificent size, and apparently new to science.

The Naturalist to the Survey, Dr. A. R. Anderson, worked in the Museum as usual from May to October, and besides sorting and in part naming the Echinoidea with a view to ultimately cataloguing the group, rendered very valuable assistance in mounting a large number of *Investigator* Invertebrates for the Exhibition Gallery.

The Artist to the Survey, Babu Shib Chunder Mondul, has worked in the Museum all through the year with the greatest diligence and success.

(ii) THE BENGAL ARCHÆOLOGICAL SURVEY.

Of this Survey, for the direction of which the Superintendent's Office has been a channel, little has to be said, owing to the fact that the Archæologist has done but little work in direct connection with the Museum.

The Archæologist reported his return from the field on 8th May 1893 from which date, until his departure for further field work in Behar on 15th November 1893, he worked, but under protest, in the Museum, completing a rough report, with illustrations, of his tour in Orissa and revising the Report of a previous tour in Bihar.

INDIAN MUSEUM.

From 15th November to 25th February he collected in Bengal proper sending to the Museum 74 archæological relics. None of these appear to be of any great interest.

(iii) NUMISMATICS.

The Coin Catalogue and the coins newly acquired have been noticed in their proper places; here the Superintendent has to record the great obligations that the Museum owes to Dr. Hærnle for constant expert advice.

(iv) SOLDIERS' INDUSTRIAL EXHIBITION.

In the month of January, in accordance with the Trustees' permission the Soldiers' Industrial Exhibition was held in the vestibule and upper western verandah of the Museum. No damage was done, and no complaints came to the Superintendent's notice.

(v) CONCLUSION.

Appendices showing (1) a Summary of registered additions for the year, (2) a List of Donors to the Museum during the year, (3) a List of Donors to the Library during the year, and (4) the Yearly Return of Visitors, follow.

From the last it will be seen that 447,481 persons were admitted to the Museum during the 239 days on which the institution was open to the general public—a daily average of 1,872 persons.

THE COLLECTIONS

So far as is known are in good order, though the reserve collections are still stored in a most precarious situation.

REPORT OF THE SUPERINTENDENT,

THE BUILDING.

The condition of the Museum building is apparently unchanged.

The large cracks that traverse the building from roof to foundation—especially the one in the eastern face (Mammal Gallery)—have at times given rise to anxiety, but the experts who have been consulted state that these cracks must be expected to open out as the building dries after the rains.

The explanation does not appear to be perfectly satisfactory; and the state of the cracks is being carefully watched.

A. ALCOCK,

Superintendent of the Indian Museum.

INDIAN MUSEUM.

APPENDIX A.

Summary of registered Additions for the year 1893-94.

ZOOLOGY—						
PROTOZOA—						
FORAMINIFERA—						
Donations	6			6	6	
COELENTERA—						
POMIPERA—						
Donations	4					
Exchanges	45			49		
HYDROMEDUSÆ—						
Donations	9			19		
Purchases	5					
ANTHOZOA—						
Donations	131			141		
Purchases	7					
SCYPHOMEDUSÆ—						
Donations	1			1		
CYRNOPOREA—						
Purchases	2			2		
PLATYHELMINTHES—					207	
TREMATODA—						
Donations	4			4		
NEMATHELMINTHES—						
NEMATODA—						
Donations	1			1		
ECHINODERMA—						
HOLOTHURIOIDEA—						
Donations	35			35		
ECHINOIDEA—						
Donations	443			449		
Purchases	6					
OPHUROIDEA—						
Donations	58			67		
Purchases	9					
ASTEROIDEA—						
Donations	134			178		
Purchases	44					
CRINOIDEA—						
Donations	37			37		
ANNELIDA—					766	
CHETOPODA—						
Donations	43			43		
ARTHROPODA—						
CRUSTACEA—						
Donations	739			739		
ARACHNIDEA—						
Donations	38			38		
MYRIPODA—						
Donations	3			3		
HEXAPODA—						
Orthoptera—						
Donations	255					
Purchases	1		256			
Rhynchota—						
Donations	103			142		
Museum Coll.	39					
Neuroptera—						
Donations	1		1			
Coleoptera—						
Donations	137					
Museum Coll.	70					
Reared in Mus.	17		224			
Lepidoptera—						
Donations	111			340		
Purchases	168					
Museum Coll.	1					
Reared in Mus.	60					
Hymenoptera—						
Donations	17		65			
Museum Coll.	46					
Reared in Mus.	2					
Diptera—						
Donations	11		55	1,083		
Museum Coll.	44					
PODAXONIA—					1,863	
POLYZOA—						
Donations	3			3		
BRACHIOPODA—						
Donations	10			10		
GEPHYERA—						
Purchases	1			1		
MOLLUSCA—						
Donations	23,608			23,621		
Exchanges	13					
CHORDATA—					23,621	
VERTEBRATA—						
Mammalia—						
Donations	38		43			
Purchases	5					
Sauropsida—						
Aves (skins)—						
Donations	48	48				
Aves (Eggs)—						
Purchases	2	2				
Reptilia—						
Donations	36	36	86			
Ichthyopsida—						
Pisces—						
Donations	539	539	539	668	668	27,190
ARCHÆOLOGY—						
Prehistoric Relics,						
Sculptures and						
Miscellaneous—						
Donations	15			15		
Coins—						
Donations	57			57		
TOTAL SPECIMENS REGISTERED DURING THE YEAR						27,265
						Zoology.
						Archæo-logy.



INDIAN MUSEUM.

APPENDIX B.

*List of Donors to the Indian Museum during the year
1893-94.*

Afghan Boundary Commission.	Economic and Art Section (by exchange).
Alcock, Dr. A.	Elson, Mr. S. R.
Anderson, Dr. A. R.	Ford, Col.
" " J., F. R. S.	Frankfurt, Naturhistorisches Institut.
Armstrong, Dr.	Fraser, Mr. O. L.
Asiatic Society of Bengal.	Fulton, Mr. H. (by exchange).
Baker, Mr. E. C. S.	Goffrey, Dr.
Ball, Mr. V.	Government of Assam.
Banerjee, Babu K. C.	" " Bengal.
Barnet, Mr. J.	" " Central Provinces.
Bartlett, Mr. G.	Halsted, Capt.
Baxter, Dr.	Haviland, Mr. H. A.
Beddome, Col.	Houghton, Mr. H. L.
Bell, Dr. G. J. H.	Hume, Mr.
Blansford, Mr. W. T., F. R. S.	Hungerford, Dr. R.
Bombay Branch, Royal Asiatic Society.	Karachi Museum.
Brown, Capt.	Lord, Mr. G.
Calcutta Mint.	Marine Survey of India.
Cambridge University Museum (by exchange).	Martin, Dr. L.
Canterbury Museum.	Milner, Mr. A. J.
Cantor, Dr.	Mukherji, Babu P. C.
Dallas, Mr. J. P.	Mullick, Raja R. L.
Day, Mr.	Mundal, Babu P. C.
Dodgson, Mr. W.	Nevill, Mr. G.
Drury, Dr. F. J.	Oldham, Dr.
Eastern Telegraph Company.	Peal, Mr. S. E.

REPORT OF THE SUPERINTENDENT,

Radde, Dr. A. G.	Taylor, Mr. W. C.
Ransom, Mr. S	Temple, Capt.
Rodgers, Capt.	Theobald, Mr. W.
Roepstorff, Mons. A. A. de.	Tonnerre, Dr.
Row, Capt. J. H.	Trevandrum Museum.
Rutledge, Mr. W.	Weber, Prof. Max.
Stearns, Mr. R. E. C.	Wicks, Capt. G. W., R. N. R.
Steg, Capt.	Wood-Mason, J.
Stewart, Mr.	Worsley, Capt.
Stockholm Museum.	Yunan Expedition.
Stoliczka, Dr. F. (Collection).	Zoological Gardens, Calcutta.
Sydney, Australian Museum (exchange).	

INDIAN MUSEUM.

APPENDIX C.

*List of Donors to the Library of the Indian Museum during
1893-94.*

Adelaide, Royal Society of South Australia	3
Alcock, Dr. A.	8
Bell, Mr. F. Jeffrey	1
Bergroth, Dr. E.	2
Berlin, Museum für Naturkunde Konigliche Friedrichs-Wilhelms Universität zu Berlin	25
Bombay Society of Natural History	5
Boston Society of Natural History	1
Bruner, Mr. L.	7
Brussels, Société Royale Malacologique	4
Calcutta, Agricultural and Horticultural Society of India	1
" Asiatic Society of Bengal	26
" Indian Association for the Cultivation of Science	2
" Microscopical Society	1
" Royal Botanical Gardens	1
" Soldiers' Industrial Exhibition	1
Cambridge (Mass.) Museum of Comparative Zoology at Harvard College	17
Cape of Good Hope, Albany Museum	1
Cape Town, South African Museum	2
Chili Scientific Society	2
Cincinnati Museum Association	1
Colombo, Royal Asiatic Society, Ceylon Branch	2
Cotes, Mr. E. C.	85
Dehra Dun, Forest School	13
Desbrochers des Loges, Mons. J.	14
Dresden, Zoological Museum	1
Dublin, Royal Irish Academy	8
" Science and Art Museum	2
Edinburgh " " " " "	1
Friedländer and Sohn, Messrs. R.	26
Fulton, Mr. H.	2
Government of Assam	10
Carried forward	275

REPORT OF THE SUPERINTENDENT,

	Brought forward	275
Government of Bengal, Financial Department		1
" " Printing Press		8
" Bombay		8
" Central Provinces		8
" India, Comptroller of India Treasuries		1
" " Economic Products, Reporter on—		28
" " Finance and Commerce		1
" " Foreign Department		5
" " Geological Survey		6
" " Home Department		29
" " Imperial Library		13
" " Marine Survey		2
" " Meteorological Department		31
" " Printing Press		24
" " Public Department		1
" " Revenue and Agricultural Department		34
" " Sanitary Commissioner		2
" " Surgeon-General		1
" " Survey Department		2
" " Trigonometrical Survey		3
" Madras		3
" North-Western Provinces and Oudh		36
" Perak		32
" Punjab		6
" United States of America		11
Haarlem, Koloniaal Museum		57
Jamaica, Institute of		3
Karachi, Collector of Customs		5
Kirby, Mr. W. F.		1
Leipzig, Königlich-Sachs. Gesellschaft der Wissenschaften		17
London, British Museum		1
" " (Natural History)		6
" Imperial Institute		1
" Royal Society		16
" Zoological Society		7
Lorenz, Dr. L. von		4
Lucknow, Provincial Museum		2
Madras, Central Museum		1
	Carried forward	692

INDIAN MUSEUM.

	Brought forward	692
Manchester, Owen's College		3
Marwar Forest Department		1
Mearut, Horse Breeding Department		1
Milwaukee Public Museum		1
Mitra, Babu S. C.		7
Monaco, S. A. S. le Prince Albert de		1
Moscow, Congrès International		2
New York, American Museum of Natural History		2
Norman, Rev. A. M.		10
Padova, R. Stazione Biologica Sperimentale		13
Parker, Mr. W. N.		1
Pennsylvania University		1
Perak, Museum		1
Pergande, Mr. Theo.		1
Philadelphia, Academy of Natural Sciences		1
Quebec Literary and Historical Society		1
Sarasin, Mons. E.		6
Schulze, Prof. E.		1
Sclater, Mr. W. L.		1
Shufeldt, Mr. R. W.		1
Smith, Mr. E. A.		1
Stockholm, Kongliga Svenska Vetenskaps Akademien		10
Switzerland, Entomological Society of		1
Sydney, Agricultural Department of New South Wales		16
" Australian Museum		7
" Linnean Society of New South Wales		3
Thurston, Mr. E.		1
Torino, Musei de Zoologia ed Anatomia comparata della R. Università		34
Trouessart, Dr. E.		2
Victoria Zoological and Acclimatisation Society		1
Vienna, K. K. Natur. Hof. Museum		2
Webster, Mr. F. M.		3
	Donations	829
	Volumes purchased	554
	TOTAL	1,388

REPORT OF THE SUPERINTENDENT, INDIAN MUSEUM.

APPENDIX D.

YEARLY RETURN OF VISITORS.

Number of Visitors from 1st April 1893 to 31st March 1894.

Month.	NATIVES.		EUROPEANS.		TOTAL.
	Male.	Female.	Male.	Female.	
April 1893 .	31,109	8,868	848	355	41,180
May* " .	15,498	5,836	354	77	21,765
June " .	24,723	6,907	458	148	32,236
July " .	34,678	11,841	717	170	46,906
August " .	28,988	8,227	507	116	37,838
September " .	27,211	7,612	552	212	35,587
October " .	34,832	9,637	691	210	45,370
November* " .	13,550	4,101	328	76	18,055
December " .	34,013	8,342	963	275	43,593
January 1894 .	37,523	10,714	1,426	695	50,358
February " .	27,406	9,274	652	206	37,538
March " .	28,843	7,609	535	168	37,055
GRAND TOTAL .	338,374	98,368	8,031	2,708	447,481

The number of Visitors to the Museum during the 239 days on which the Institution was open to the general public was 447,481, or a daily average of 1,872 persons.

* Closed on account of annual repairs from 1st to 15th May and 1st to 15th November.





ANNUAL REPORT
OF
THE ECONOMIC AND ART SECTION
OF THE
INDIAN MUSEUM
FOR THE YEAR
1893-94.

To
THE HONORARY SECRETARY TO THE TRUSTEES
OF THE INDIAN MUSEUM.

Dated the 14th November 1894.

SIR,

I have the honour to submit the Annual Report of the Economic and Art Section of the Indian Museum for the year ending 31st March 1894.

2. Mr. Edgar Thurston, who officiated for me as Reporter on
THE CHARGE OF THE SECTION. Economic Products to the Government of
India, remained in charge of the Section
from the beginning of the year up to 23rd November. On that
date, I took over charge from him, in accordance with the deci-
sion of the Conference, held on the 17th of the same month, at
which were present Sir Edward Buck, C.S.I., LL.D. (Secretary
to the Government of India in the Revenue and Agricultural

REPORT OF THE OFFICER IN CHARGE,

Department), Dr. George King, C.I.E., F.R.S. (Chairman of the Trustees), and Mr. A. Pedler, F.R.S. (Vice-Chairman).

3. On December 24th, I left Calcutta to attend, on behalf of the Indian Museum, the Art Conference held at Lahore on the 1st to 4th January 1894, and thence proceeded to Guzerat and Kathiawar to collect information and specimens of the varieties and races of cotton cultivated in those portions of Western India. I returned to Calcutta on the 20th of February. Mr. Mukharji had remained in charge of the Section during my absence on tour.

4. The proceedings of the Art Conference have been published separately, and the Resolutions which it passed are now before Government. It would, perhaps, be premature to offer any personal opinions on a measure still under consideration, but should practical effect be given to the Resolutions framed by the Conference, it may be expected that important practical results will ensue through their securing greater uniformity in the management of Indian Art Museums; by their establishing a closer connection between these Museums and the Schools of Art; and by their encouraging Native manufactures and bringing the artisans into touch with the general public through the agency of the Museums of approved patterns and designs. A measure of great importance was fully discussed, namely, a method of uniform cataloguing of Indian Art collections in all Museums throughout India and elsewhere, so as to bring the artisans into touch with these show rooms. This will be found in the Resolution on page 6 of the Report.

5. During my tour in the Bombay Presidency, I was able to collect a large number (several hundred separate samples) of herbarium and other specimens of different forms of the cotton plant, as well as Museum samples of the raw staples. So far as quantity even is

ECONOMIC AND ART SECTION,

concerned these specimens will prove a valuable addition to the Museum collection, but in a scientific point of view I am sanguine that their importance cannot be over-estimated inasmuch as they will form a collection, perhaps the first of its kind in India, in which the primary effort put forth has been to personally determine the botanical character of the different trade staples.

6. For this purpose I travelled for many miles through cotton fields, conversed with the cultivators as to the merits of this form and that, ascertained their reasons for discontinuing one form and substituting another, the profits of one as compared with the other, the markets for which each was more especially suitable. By carrying with me all previous collections, I was able to compare day by day the various forms met with, and did not, therefore, trust memory which was realised to be too capricious in a matter of such delicacy as the distinguishing of minute differences—differences which to the botanist are of no value, but which are often the only visible manifestations of widely different agricultural products. In this enquiry I was very greatly aided by Professor Middleton of the Baroda College. The services of that gentleman were placed at my disposal through the liberality of the Baroda Durbar who were not slow to recognise the possible value to Guzerat of a scientific enquiry into the character of its cotton crops. Mr. Middleton, as Professor of Agriculture, has for several years taken a keen interest in the very problem that I had before me, and his critical assistance was invaluable. By debating on the spot, and with often a large gathering of cultivators around us, points of interest were eliminated that otherwise would very possibly have escaped notice.

7. But I must take this opportunity to mention the names of two other gentlemen who also, and very greatly, contributed to the thoroughness of the enquiry conducted. Mr. Mollison, Superintendent of Farms in Bombay, joined us on several occasions, and through his very intimate knowledge of agricultural problems

REPORT OF THE OFFICER IN CHARGE,

gave an additional weight to the views ultimately matured. Mr. R. Mehta was directed by the Bombay Government to accompany me throughout my tour in Bombay. For some time Mr. Mehta had charge of an experimental farm and has for years past studied the cotton question. In addition to these high qualifications, his personal knowledge of the people and of their language enabled us to ascertain every possible shade of meaning attributable to their explanations for this method of cultivation and that, and for the substitution of one form of cotton for another. I may confidently add, therefore, that without the aid rendered to me by the Bombay authorities my enquiry would have had scarcely more than a botanical value. I mention these particulars however, in order to show the high merit that may be assigned to the numerous collections made. It would be premature to give here the general conclusions arrived at, since that would but anticipate the report that I have under preparation, and which cannot be published until the remaining portions of the Indian cotton area have been similarly explored. But I may add that I found a truly wild form of *Gossypium* in several localities which I believe to have very possibly been one, if not the chief source, of the cultivated long staple cottons of Guzerat. That these finer and more valuable cottons have within recent years been displaced by an inferior short staple cotton obtained apparently from the North-Western Provinces. That this substitution has been due to two causes. The dictates of certain persons interested in that trade and the fact that though far inferior in length of staple and quality of wool the yield is higher, weight to acre. It was still further noted that in some parts of Guzerat and Kathiawar the soil and climate are such that in a very few years the staple of this inferior stock had rapidly improved so that one of the modern crops of high value may be characterised as a staple little inferior in length to the prized races of former years, while a very hardy plant and a profitable one. But in other tracts of the province the substitution has proved disastrous since

ECONOMIC AND ART SECTION.

the exotic crop far from improving has degenerated. Another point of great moment was brought out, namely, that a change of crop had been shown necessary, since in Surat, for example, a degeneration in soil-productiveness had taken place. Such new soils (new to cotton) as "Navsari" were yielding better cottons than the once famous tracts of the so-called "Surats."

8. By way of showing the extent of ground covered during the tour here dealt with, I may mention the following dates:—Explored cotton fields around Surat on January 12th, 13th, and 14th; Broach 15th, 16th, and 17th; Amod and Bimpura (covering 22 miles of cotton fields) 19th and 20th; Baroda 21st, 22nd, and 23rd; Ahmedabad 24th and 25th (inspected mills and talked over many questions with Mr. Ramchitlal Chutia Lal, C.I.E.); Wadwan 26th (discussed the question with Mr. Beadle, a gentleman interested in the cotton trade); Bhavnagar 27th (visited many fields, discussed the cotton trade with Mr. Spalding); Songad and Badal 28th; Junagad 29th; Bilka 30th; Verawal 31st and 1st February; Mongrol 2nd and 3rd; Gondal 4th; Rajkot 5th; Wankaneer 6th; Morvi 7th; Wawani 8th and 9th; Veramgaum 10th; Baroda 11th and 12th; Navsari 13th and 14th; and returned to Bombay on the 16th. At Bombay I visited several of the mills and discussed the cotton question with certain merchants.

9. It so happened that it was possible to spend the nights mostly in train, but it was felt that the visit was too rapid and that it would have been preferable had a fortnight more at least been spent on the tour, but such as it was much useful information was collected and many specimens which, it is believed, are of great value obtained.

10. Besides cotton a large number of other objects of economic value were collected or supplies arranged for personally, a full list of which will be found in the Revised Programme of the Imperial Institute and Indian Museum works for 1894-95.

REPORT OF THE OFFICER IN CHARGE,

11. In concluding this statement of the personal tours conducted by me, I need scarcely add that my attention was directed exclusively to questions of economic products. It was felt, however, that had arrangements been made beforehand to furnish me with a certain sum of money to be devoted to the purchase of articles of art and industrial interest, many examples might have been secured that would have greatly enriched the collections in other Sections of the Economic and Art Museum. The carved wood-work of Ahmedabad, the embroideries of Kathiawar, and the bead-ornamentations of Bhavnagar, are but indifferently represented in our Museum. Admirable and inexpensive examples of these might have been picked up while on tour, and such ancient towns as Broach might have afforded art treasures of great value.

12. Separate Registers have now been opened for each court of this Section of the Museum in which collections are numbered and recorded on receipt. The "Registration Number" of each article is intended to be permanent, and which will be referred to not only in connection with the work of this Section itself, but also in connection with duplicates that may be supplied to other Museums and scientific institutions, or to merchants and experts.

13. A new system of labelling the articles shewn in the three courts of this Section has been devised, of which the prominent feature is the number in large characters, in place of several lines of useless or at any rate unreadable descriptions. It has not been found possible to shew the prices of the articles on the labels, as these being changeable, it is believed would rather prove misleading to the general public than otherwise. The price of each article actually paid is, however, entered in the Register. The labelling of the articles under the new system has been commenced in conjunction with their registration in the new Registers.

ECONOMIC AND ART SECTION.

14. In my letter to the Trustees, No. 228, dated 17th March 1894, I stated that the spirit which should regulate Indian Art-ware Museums should be—

The Art-ware Court.

- (a) to display the better samples of manufactures so as to foster and develop, on purely indigenous lines, the character of each industry;
- (b) to so arrange the collections as to make the Museum attractive and instructive;
- (c) to afford such facilities to the public as may tend to increase the sale of the manufactures and enhance the value of Indian arts and industries.

In accordance with this spirit a classification of the specimens shewn in the Art-ware Court was drawn up. The majority of the articles have already been arranged according to this classification, and the rest are being re-arranged in conjunction with the work of registering and labelling.

15. The arrangement of the Ethnological Court under a scientific system is, however, a more difficult task, the specimens being already shewn geographically and under the different races and tribes of people concerned. The main work of their re-arrangement has, therefore, been postponed for the present; only a few specific classes of articles, such as images of deities, ornaments for personal adornment, articles of war and chase, etc., being taken in hand in order to exhibit them on a scientific basis. A large number of articles belonging to countries outside India, which were transferred to the Museum by the Asiatic Society of Bengal (and for the safe keeping of which the Trustees are responsible to that Society), but which were rejected by my predecessor in course of the assortment of the collections in the new building, have now been brought up and arranged in the Court, since they

REPORT OF THE OFFICER IN CHARGE,

were in some danger of being destroyed in the godowns where they had been stored.

16. As reported before, no attempt had been made to arrange the economic specimens, nor was the Court opened to the public prior to my taking over charge. The collection consists of many thousands of specimens, of which a large number when examined will, no doubt, be found to have received such damage as to have become unsuitable for further exhibition. I, therefore, represented to the Trustees in my letter of the 17th March last that unless speedy measures were taken for their arrangement in suitable cases the whole collection would be lost. The Trustees on my recommendation have sanctioned Rs. 500 for fitting up one bay of the gallery as an experimental measure. The action taken in this matter will appear in future reports.

17. In the Art-ware Court, 16 specimens of pottery from the Wonderland Pottery Works, Bombay, were received during the year; in the Ethnological Court 49 specimens, consisting of articles belonging to the Bhutia, Singpho, Coorg, and Toda tribes, were added; and 140 articles, being duplicates of those sent to the Imperial Institute, London, have been retained for the Economic Section.

18. No theft occurred during the year, no specimens were broken or lost, and except some deterioration here and there, due to age and climate, the specimens in the Art and Ethnological Courts may be said to be in good condition. The same cannot be said of the Economic Court where the specimens are still in considerable danger.

19. During the year, 198 specimens of commercial and 17 of index products were sent to the Imperial Institute, and 108 specimens were sent to the Antwerp Exhibition, out of which 140 duplicates have been retained for the

Imperial Institute
Specimens and Duplicates
for the Indian
Museum.

ECONOMIC AND ART SECTION.

Indian Museum. The procedure hitherto followed has been to send all specimens to the Imperial Institute in the first instance, keeping for the Museum the duplicates of those only which had been received in sufficient quantities to allow a division. In future, it has been decided to reverse the procedure and to send to London only such collections as are complete, and in sufficient quantity to allow of two sets—one for the Institute and the other for our Museum. It is believed this procedure will be recognised as essential, otherwise the correspondence of the two collections would be destroyed.

20. In last year's Annual Report it was stated that 24 Hand-books on various products sent to the Imperial Institute were issued or under issue. Six more of these Hand-books were issued during the year, *viz.*, on India Rubber, Barley, Steatite, Salep, Chaulmugra oil, and Blackwood or Rosewood of South India. All these Hand-books were prepared by Mr. Thurston, but they were, for the most part, reprints of articles from the Dictionary of Economic Products. This system has been discontinued, and future Hand-books will incorporate new investigations. As a result some delay is necessary before publication, but several are in hand.

21. Besides the Hand-books, a series of papers on various economic subjects, having a close relation to the articles displayed in this Section of the Museum, are also being issued under the name of "Agricultural Ledgers." Of these (some of which are revised editions of those previously issued or under issue) 30 are now ready, and of which the following is a list :—

REPORT OF THE OFFICER IN CHARGE,

List of Agricultural Ledgers under Issue.

Year.	No.	SERIES NAME, AND NUMBER.		Subject.	REMARKS.
		Name.	No.		
1892	1	Agricultural .	1	Indian Fodder Grasses. South Indian Fodders.	
	2	Ditto .	2	Seeds. Classification of; selection; preservation; distribution, etc. Seed dis- tribution in the United States.	
	3	Vegetable Product.	1	Solanum tuberosum. Potato preservation.	
	4	Mineral and Metallic.	1	Saltpetre. Deposits of So- dium Nitrate near the Sea coast of Chili.	
1893	1	Agricultural .	3	Silt Deposits: Fertilisation of soils by inundation.	
	2	Entomological	1	Locusts.	
	3	Vegetable Product.	2	Agave Americana.	
	4	Ditto .	3	Solanum tuberosum. Potato disease.	
	5	Ditto .	4	Vitis vinifera. Vine disease in Kashmir.	
	6	Ditto .	5	Sugar. Kinds of sugar which may be classed as refined.	
	7	Ditto .	6	Vitis vinifera. Possible raisin industry in Sind.	
	8	Ditto .	7	Solanum tuberosum. Hill potatoes used as seed in Bengal.	
	9	Entomological	2	Silk. Tusar silk production in the Central Provinces.	
	10	Mineral .	2	Saltpetre. Used as a manure at the Dumraon Farm.	

ECONOMIC AND ART SECTION.

List of Agricultural Ledgers under Issue—concl'd.

Year.	No.	SERIES NAME, AND NUMBER.		Subject.	REMARKS.
		Name.	No.		
1894	11	Implement and Machinery.	1	Ploughs. The self-inverting plough used at Dumraon Farm.	
	12 and 13	Mineral and Metallic.	3	Reh. Reclamation of Reh or Usar Land.	
	14	Miscellaneous	1	Bulletins issued by the Department of Land Records and Agriculture, Madras.	
	15	Vegetable Product.	8	Ground nut.	
	16	Veterinary .	7	Horse. Diseases of the—	
	17	Agricultural .	4	Dairy farming and dairy produce (cream separators).	
	18	Vegetable Product.	9	Medicago sativa. Lucerne cultivation.	
	19	Veterinary .	8	Horse and oxen. Cattle diseases: Anthrax.	
	20	Agricultural .	5	Manures and manuring (green soiling).	
	1	Miscellaneous	2	Introductory note by the Editor.	
	2	Agricultural .	6	Fodder. Silage making in India.	
	3	Ditto .	7	Manures. Farm yard.	
	4	Miscellaneous	3	Botanic and Economic collections. A note on how to collect, catalogue, and preserve specimens, by the Editor.	
	5	Agricultural .	8	Use of Embankments in Agriculture.	
	6	Vegetable Product.	10	A note on Rhea Fibre by the Editor.	

REPORT OF THE OFFICER IN CHARGE,

22. In the issue of former Ledgers the relation to the Dictionary was lost sight of. The Government of India, therefore, approved of my recommendation to remodel all past issues upon a more satisfactory basis. This entailed considerable labour and occupied much time. The new scheme has been linked on the proposal for a revision of the Dictionary, and a Resolution of the Government of India and a draft scheme to give practical effect to that Resolution is at present before all Local Governments and Administrations for consideration. I am hopeful that, when the Trustees take the new position of affairs into consideration, they will recognise that considerable progress has been made, and steps already taken that will place the literature of the products in the Museum and those being made on a satisfactory position.

23. Besides the Hand-books and Agricultural Ledgers, the issue of the School Lesson Sheets, prepared under the direction of the Trustees of the Indian Museum, has been associated with the work of this Section, since it is expected that many such Sheets in illustration of specimens exhibited in the Museum will be prepared in course of time. The importance of this work will best be understood from the following statement which shews the indents received from the different provinces, for the two Sheets at present under issue, viz., those on Locust and Wheat Weevil, both in English and in the vernaculars.

ECONOMIC AND ART SECTION.

Indents for School Lesson Sheets.

PROVINCE.	English.	Hindi.	Urdu.	Urdu.	Gurmukhi.	Marathi.	Gujarathi.	Sindhi.	Canarese.	Burmese.	REMARKS.
Bombay	223	...	...	...	...	120	50	60	50	...	To be done at Poona, except the English.
North-Western Provinces	300	3,500	1,850	...	200	...	...	...	...	...	• 849, No. 1.
Punjab	100	...	...	...	...	1,000	...	...	...	...	469, No. 2.
Central Provinces	100	2,000	...	500	...	...	...	...	150	1,750	† 282, No. 1.
Burma	2	...	...	...	...	600	...	...	...	...	62, No. 2.
Mysore	60	...	100	...	...	...	...	...	...	...
Berars	...	300	...	...	...	...	...	...	...	...
Rajputana	...	1	...	...	...	...	...	...	...	...
Central India	...	250	...	...	...	...	...	...	...	...
Almir	...	500	...	...	...	12	...	...	...	...
Bihar	...	...	...	...	...	...	...	...	...	...
Bikanir	...	...	...	...	...	...	...	...	...	...
Kota	...	...	...	...	...	...	...	...	...	...
Baluchistan	...	...	30	...	...	...	...	...	...	...
Dehra Forest School	...	1	1	...	...	...	...	...	...	...
TOTAL	6	6,552	1,981	500	200	1,732	50	60	200	1,750	

Hindi, Locust, 6,552 + 849 = 7,401.
 Urdu, Weevil, 6,552 + 469 = 7,021.
 Urdu, Locust, 1,981 + 282 = 2,263.
 " Weevil, 1,981 + 62 = 2,043.

REPORT OF THE OFFICER IN CHARGE,

24. Another important work, in which the Economic and Art Section is participating, is the examination of economic products sent from the Indian Museum to the Imperial Institute, London. Certain scientific men of eminence, such as Professor Armstrong, the President of the Chemical Society, Professor D. Dunston, Head of the Research Laboratory of the Pharmaceutical Society of Great Britain, and Professor Hummel of Yorkshire College, Leeds, as well as experts and merchants are working in this direction, and a few fibres, dyes, and medicinal products, have been subjected to analysis and scrutiny. In course of years it is to be expected that the value of such co-operation will be very great.

25. A considerable amount of time had to be devoted to the correspondence and collections connected with the Antwerp Exhibition. The facilities afforded by Exhibitions for obtaining specimens and informations were, however, considerable, so that the experience gained amply justifies the action taken by the Trustees and the Government of India in combining the operations of the Reporter on Economic Products with that of the Museum. Through the instrumentality of such recurring Exhibitions, a continuous supply of new specimens is obtained without any financial obligations being laid on the Museum. The Economic and Art Section of the Museum is thereby made the head-quarters of all operations of this nature, which, if not so associated, would become independent, and every year more and more so. A vitality that seems destined to make this Section of the Museum of practical value to the country, would thereby be lost, and the Museum become, as in all previous experience, a dead show. It may fairly be said that an Economic Museum differs essentially from all other Museums in that it is not and should not be a mere repository of specimens. It is a collection of commercial products and manufactures, and must in that sense contain not only the grains of twenty years ago, but those of the current year. Its operations in relation to rice are

ECONOMIC AND ART SECTION.

not complete by the possession of a good sample of *Oryza sativa*; it requires the actual samples of each year's crop. It must be a living and modifying Exhibition in direct touch with trade in all its phases. This is very largely attained by the numerous facilities secured of obtaining fresh samples through the association of the Museum with all the operations of the Government of India, which are originated by the exigency of external demands in connection with Exhibitions, the Imperial Institute, and Foreign Museums.

26. Unfortunately the full realisation of such a programme of usefulness cannot be attained until the Economic Gallery has been fitted up with cases, and the collections that exist displayed to the public. When once so arranged, the continuous modification and renewal of samples, attainable through the instrumentality of Exhibitions, would be a matter of daily duty laid on the curators, who at present are mainly concerned in the almost hopeless task of checking the decay and decomposition incidental to thousands of samples of raw products imperfectly housed.

27. During the tenure of my office the staff of the Economic and Art Section, consisting of Mr. R. A. D'Cruz, clerk, Economic Court; Babu Phani Bhusan Dutt, clerk, Ethnology Court; Babu Hari Das Mookerjee, clerk, Art-ware Court; Babu Devendranath Dhur, head clerk, Curator's Office; Babu Rajani Kanta Das, clerk, and Babu Gyanendra Nath Chatterji, temporary clerk, have worked well and given me every satisfaction.

28. It is hardly necessary for me to add, however, that without Mr. Trailokya Nath Mukharji's energy and skill little or no progress would have been made.

I have the honour to be,

SIR,

Your most obedient Servant,

GEORGE WATT,

Officer in charge, Economic and Art Section.



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